FIGURE 1

R35464	GGCCGGGTCG	TTTCTCGCCT	GGCTGGGATC	GCTGCTCCTC	TCTGGGGTCC	50
ORF	P G R	F S P	G W D R	C S S	L G S	16
R35464	TGGCCGGCCG	ACCGAGAACG	CAGCATCCAC	GACTTCTGCC	TGGTGTCGAA	100
ORF	W P A D	R E R	S I H	D F C L	V S K	33
R35464	GGTGGTGGGC	AGATTCCGGG	CCTCCATGCC	TAGGTGGTGG	TACAATGTCA	150
ORF	V V G	R E R A	S M P	R W W	Y N V T	50
R35464	CTGACGGATC	CTGCCAGCTG	TTTGTGTATG	GGGGCTGTGA	CGGAAACAGC	200
ORF	D G S	C Q L	F V Y G	G C D	G N S	66
R35464	AATAATTACC	TGACCAAGGA	GGAGTGCCTC	AAGAAATGTG	CCACTGTCAC	250
ORF	N N Y L	T K E	E C L	K K C A	T V T	83
R35464	AGAGAATGCC	ACGGGTGACC	TGGCCACCAG	CAGGAATGCA	GCGGATTCCT	300
ORF	E N A	T G D L	A T S	R N A	A D S S	100
R35464	CTGTCCCAAG	TGCTCCCAGA	AGGCAGGATT	CTTGAAGACC	ACTTCAGCGA	350
ORF	V P S	A P R	R Q D S	* R P	L Q R	116
R35464	TATGTTTCAA	NTATTGNAAG	AATAATTGCA	CCGNCAACGN	ATT-------	393
ORF	Y V S *	I * R	I I A	P * T *		130

KEY

R35464 = Nucleic acid sequence of EST R35464 (SEQ ID NO: 12)

ORF = EST R35464 Open Reading Frame Translation (SEQ ID NO: 13)

FIGURE 2

```
R74593 GCAATAATTA CCTGACCAAG GAGGAGTGCC TCAAGAAATG TGCCACTGTC   50
ORF     Q  *  L   P  D  Q  G   G  V  P   Q  E  M   C  H  C  H   17

R74593 ACAGAGAATG CCACGGGTGA CCTGGCCACC AGCAGGAATG CAGCGGATTC  100
ORF       R  E  C   H  G  *   P  G  H  Q   Q  E  C   S  G  F    33

R74593 CTCTGTCCCA AGTCTCCCAG AAGGCAGGAT TCTGAAGACC ACTCCAGCGA  150
ORF    L  C  P  K   S  P  R   R  Q  D   S  E  D  H   S  S  D    50

R74593 TATGTTCAAC TATGAAGAAT ACTGCACCGC CAACGCAGTC ACTGGGCCTT  200
ORF      M  F  N   Y  E  E  Y   C  T  A   N  A  V   T  G  P  C   67

R74593 GCCGTGCATC CTTCCCACGC TGGTACTTTG ACGTGGAGAG GAACTCCTGC  250
ORF      R  A  S   F  P  R   W  Y  F  D   V  E  R   N  S  C      83

R74593 AATAACTTCA TCTATGGAGG CTGCCGGGGC AATAAGAACA GCTACCGCTC  300
ORF    N  N  F  I   Y  G  G   C  R  G   N  K  N  S   Y  R  S   100

R74593 TGAGGAGGCC TGCATGCTCC GCTGCTTCCG CCAGCAGGAG AATCCTCCCC  350
ORF      E  E  A   C  M  L  R   C  F  R   Q  Q  E   N  P  P  L  117

R74593 TGCCCCTTGG CTCAAAGGTG GTGGTTCTGG CCGGGGCTGT TTCGTGATGG  400
ORF      P  L  G   S  K  V   V  V  L  A   G  A  V   S  *  W    133

R74593 TGTTGATCCT TTTCCTGGGG AGCNTCCATG GTCTTACTGA TTCCGGGTGG  450
ORF    C  *  S  F   S  W  G   A  S  M   V  L  L  I   P  G  G   150

R74593 CAAGGAGGAA CCAGGAGCGT GCCCTGCGGA NCGTCTGGAG CTTCGGAGAT  500
ORF      K  E  E   P  G  A  C   P  A  X   R  L  E   L  R  R  *  167

R74593 GACAAGGGNT                                               510
ORF      Q  G                                                   169
```

KEY

R74593 = Nucleic acid sequence of EST R74593 (SEQ ID NO: 14)

ORF = EST R74593 Open Reading Frame Translation (SEQ ID NO: 15)

FIGURE 3

3/48

```
R35464          GGCCGGGTCGT TTCTCGCCTG GCTGGGA-TC GCTGCTCCTC TCTGGGGTCC  50
N39798                              TGGGANTC GCTGCTCCTC TCTGGGGTCC  28
H94519           GCNGCG-CGT TNNTCGCNT- GCTGGGA-TC GCTGCACCTC TCTGGGGTCG  47
R74593 corr.    ---------- ---------- ---------- ---------- ----------
Consensus       GGCCGGGTCGT TTCTCGCCTG GCTGGGA-TC GCTGCTCCTC TCTGGGGTCC  50
Translation      A  G  S  F   L  A  W   L  G   S   L  L  L   S  G  V    -3

R35464           TGGCCGGCCG ACCGAGAACG CAGCATCCAC GACTTCTGCC TGGTGTCGAA 100
N39798           TGG-CGGCCG ACCGAGAACG CAGCATCCAC GACTTCTGCC TGGTGTCGAA  77
H94519           NGG-CGGCCG ACCGAGAACG CAGCATCCAC GACTTCTGCC TGGTGTCGAA  96
R74593 corr.    ---------- ---------- ---------- ---------- ----------
Consensus        TGG-CGGCCG ACCGAGAACG CAGCATCCAC GACTTCTGCC TGGTGTCGAA  99
Translation      L  A  A  D   R  E  R   S  I  H   D  E  C  L   V  S  K  15

R35464           GGTGGTGGGC AGATTCCGGG CCTCCATGCC TAGGTGGTGG TACAATGTCA 150
N39798           GGTGGTGGGC AGATGCCGGG CCTCCATGCC TAGGTGGTGG TACAATGTCA 127
H94519           GGTGGTGGGC AGATGCCGGG CCTCCATGCC TAGGTGGTGG TACAATGTCA 146
R74593 corr.    ---------- ---------- ---------- ---------- ----------
Consensus        GGTGGTGGGC AGATGCCGGG CCTCCATGCC TAGGTGGTGG TACAATGTCA 149
Translation      V  V  G   R  C  R  A   S  M  P   R  W  W   X  N  V  T  32

R35464           CTGACGGATC CTGCCAGCTG TTTGTGTATG GGGGCTGTGA CGGAAACAGC 200
N39798           CTGACGGATC CTGCCAGCTG TTTGTGTATG GGGGCTGTGA CGGAAACAGC 177
H94519           CTGACGGATC CTGCCAGCTG TTTGTGTATG GGGGCTGTGA CGGAAACAGC 196
R74593 corr.    ---------- ---------- ---------- ---------- --------GC   2
Consensus        CTGACGGATC CTGCCAGCTG TTTGTGTATG GGGGCTGTGA CGGAAACAGC 199
Translation       D  G  S   C  Q  L   E  V  X  G   G  C  D   G  N  S   48

R35464           AATAATTACC TGACCAAGGA GGAGTGCCTC AAGAAATGTG CCACTGTCAC 250
N39798           AATAATTACC TGACCAAGGA GGAGTGCCTC AAGAAATGTG CCACTGTCAC 227
H94519           AATAATTACC TGACCAAGGA GGAGTGCCTC AAGAAATGTG CCACTGTCAC 246
R74593 corr.     AATAATTACC TGACCAAGGA GGAGTGCCTC AAGAAATGTG CCACTGTCAC  52
Consensus        AATAATTACC TGACCAAGGA GGAGTGCCTC AAGAAATGTG CCACTGTCAC 249
Translation      N  N  Y  L   T  K  E   E  C  L   K  K  C  A   T  V  T   65

R35464           AGAGAATGCC ACGGGTGACC TGGCCACCAG CAGGAATGCA GCGGATTCCT 300
N39798           AGAGAATGCC ACGGGTGACC TGGCCACCAG CAGGAATGCA GCGGATTCCT 277
H94519           AGAGAATGCC ACGGGTGACC TGGCCACCAG CAGGAATGCA GCGGATTCCT 296
R74593 corr.     AGAGAATGCC ACGGGTGACC TGGCCACCAG CAGGAATGCA GCGGATTCCT 102
Consensus        AGAGAATGCC ACGGGTGACC TGGCCACCAG CAGGAATGCA GCGGATTCCT 299
Translation       E  N  A   T  G  D  L   A  T  S   R  N  A   A  D  S  S  82

R35464           CTGTCCCAAG TGCTCCCAGA AGGCAGGATT CTTGAAGACC ACTTCAGCGA 350
N39798           CTGTCCCAAG TGCTCCCAGA AGGCAGGATT CT-GAAGACC ACTCCAGCGA 326
H94519           CTGTCCCAAG TGCTCCCAGA AGGCAGGATT CT-GAAGACC ACTCCAGCGA 345
R74593 corr.     CTGTCCCAAG TGCTCCCAGA AGGCAGGATT CT-GAAGACC ACTCCAGCGA 151
Consensus        CTGTCCCAAG TGCTCCCAGA AGGCAGGATT CT-GAAGACC ACTCCAGCGA 348
Translation       V  P  S   A  P  R   R  Q  D  S    E  D  H   S  S  D   98

R35464           TATGTTTCAA NTATTGNAAG AATAATTGCA CCGNCAACGN ATT------- 393
N39798           TATGTT-CAA CTA-TG-AAG AATACT-GCA CCGCCAACGC AGTCACTGGG 372
H94519           TATGTT-CAA CTA-TG-AAG AATACTGGCA CCGCCAACGC ATTCACTGGG 392
R74593 corr.     TATGTT-CAA CTA-TG-AAG AATACT-GCA CCGCCAACGC AGTCACTGGG 197
Consensus        TATGTT-CAA CTA-TG-AAG AATACT-GCA CCGCCAACGC AGTCACTGGG 394
Translation       M  F  N   Y  E  E   Y  C  T   A  N  A   V  T  G   113
```

FIGURE 3 (CON'T)

```
R35464          ---------- ---------- ---------- ---------- ----------
N39798          CCTTGC-GTG GAATCCTTTC CCACGCTGGN AATTTNGACG TTGAGAAGGA 421
H94519          CCT-GC-GTG -CATCCTT-C CCACGCTGGT ACTTT-GNCG ---------- 427
R74593 corr.    CCTTGCCGTG -CATCCTT-C CCACGCTGGT ACTTT-GACG TGGAGA-GGA 243
Consensus       CCTTGCCGTG -CATCCTT-C CCACGCTGGT ACTTT-GACG TGGAGA-GGA 440
Translation     P  C  R  A    S  F    P  R  W  Y    F  D  V    E  R    N 129

R35464          ---------- ---------- ---------- ---------- ----------
N39798          AC-------- ---------- ---------- ---------- ---------- 423
H94519          ---------- ---------- ---------- ---------- ----------
R74593 corr.    ACTCCTGCAA TAACTTCATC TATGGAGGCT GCCGGGGCAA TAAGAACAGC 293
Consensus       ACTCCTGCAA TAACTTCATC TATGGAGGCT GCCGGGGCAA TAAGAACAGC 490
Translation       S  C  N    N  F  I    Y  G  G  C    R  G  N    K  N  S   145

R35464          ---------- ---------- ---------- ---------- ----------
N39798          ---------- ---------- ---------- ---------- ----------
H94519          ---------- ---------- ---------- ---------- ----------
R74593 corr.    TACCGCTCTG AGGAGGCCTG CATGCTCCGC TGCTTCCGCC AGCAGGAGAA 343
Consensus       TACCGCTCTG AGGAGGCCTG CATGCTCCGC TGCTTCCGCC AGCAGGAGAA 540
Translation     Y  R  S  E    E  A  C    M  L  R    C  F  R  Q    Q  E  N  162

R35464          ---------- ---------- ---------- ---------- ----------
N39798          ---------- ---------- ---------- ---------- ----------
H94519          ---------- ---------- ---------- ---------- ----------
R74593 corr.    TCCTCCCCTG CCCCTTGGCT CAAAGGTGGT GGTTCTGGCC GGGGCTGTTT 393
Consensus       TCCTCCCCTG CCCCTTGGCT CAAAGGTGGT GGTTCTGGCC GGGGCTGTTT 590
Translation      P  P  L    P  L  G  S    K  V  V    V  L  A    G  A  V  S 179

R35464          ---------- ---------- ---------- ---------- ----------
N39798          ---------- ---------- ---------- ---------- ----------
H94519          ---------- ---------- ---------- ---------- ----------
R74593 corr.    CGTGATGGTG TTGATCCTTT TCCTGGGGAG CNTCCATGGT CTTACTGATT 443
Consensus       CGTGATGGTG TTGATCCTTT TCCTGGGGAG CNTCCATGGT CTTACTGATT 640
Translation       *  W  C    *  S  F    S  W  G  A    S  M  V    L  L  I   195

R35464          ---------- ---------- ---------- ---------- ----------
N39798          ---------- ---------- ---------- ---------- ----------
H94519          ---------- ---------- ---------- ---------- ----------
R74593 corr.    CCGGGTGGCA AGGAGGAACC AGGAGCGTGC CCTGCGGANC GTCTGGAGCT 493
Consensus       CCGGGTGGCA AGGAGGAACC AGGAGCGTGC CCTGCGGANC GTCTGGAGCT 690
Translation     P  G  G  K    E  E  P    G  A  C    P  A  *  R    L  E  L  212

R35464          ---------- --------
N39798          ---------- --------
H94519          ---------- --------
R74593 corr.    TCGGAGATGA CAAGGGNT                                      511
Consensus       TCGGAGATGA CAAGGGNT                                      708
Translation      R  R  *    Q  G                                         217
```

KEY
R35464 = Nucleic acid sequence of EST R35464 (SEQ ID NO.: 12)
N39798 = Nucleic acid sequence of EST N39798 (SEQ ID NO.: 17)
H94519 = Nucleic acid sequence of EST H94519 (SEQ ID NO.: 16)
R74593 corr. = Corrected version of (SEQ ID NO.: 14) G at b.p. 114
Consensus = Nucelic acid sequence for human bikunin (SEQ ID NO.: 9)
Translation = Amino acid Translation of Consensus (SEQ ID NO.: 10)

Figure 4 A.

5/48

Schematic depicting the overlap of ESTs bearing homology to the cDNA sequence encoding placental bikunin

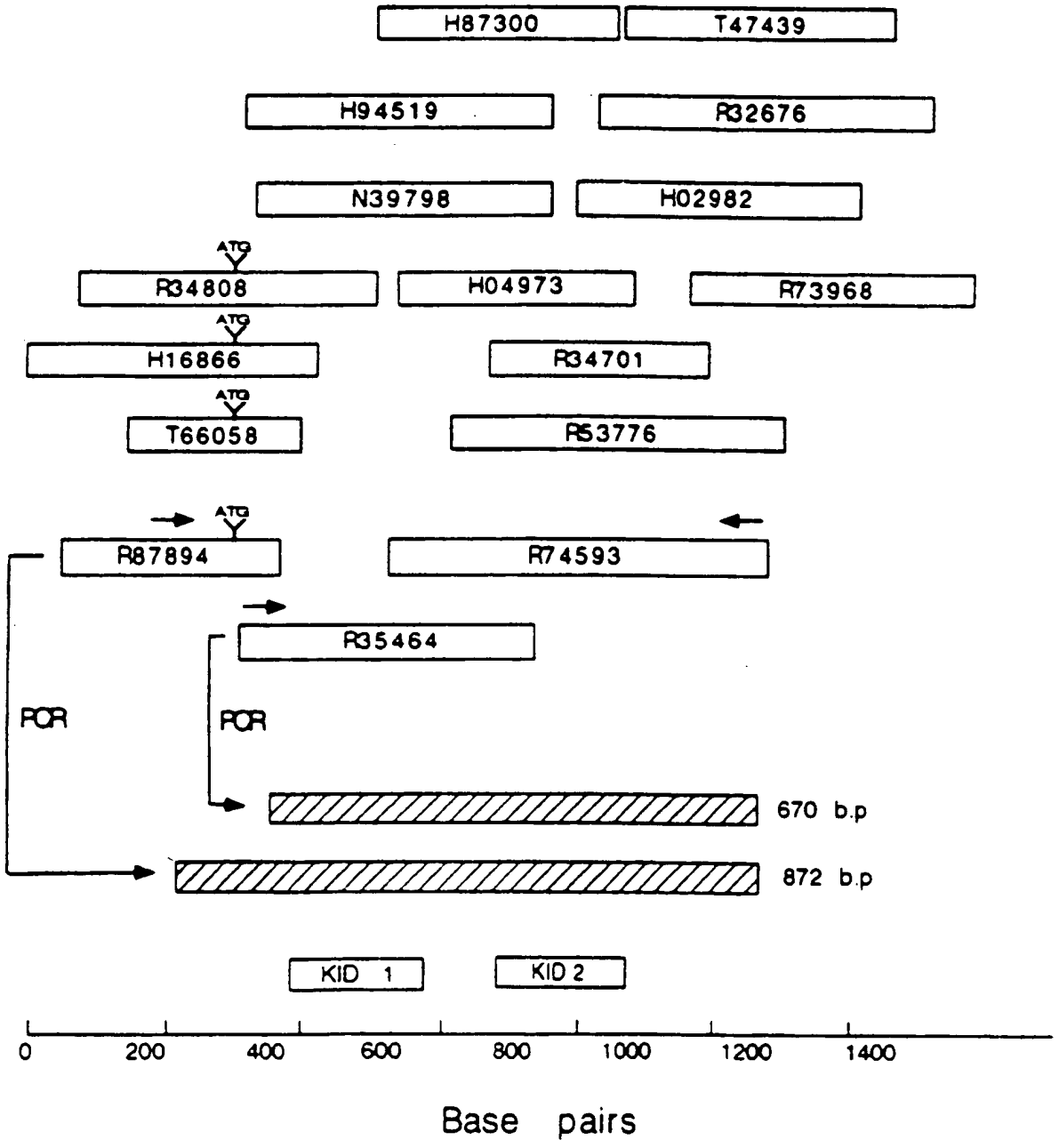

Figure 4B

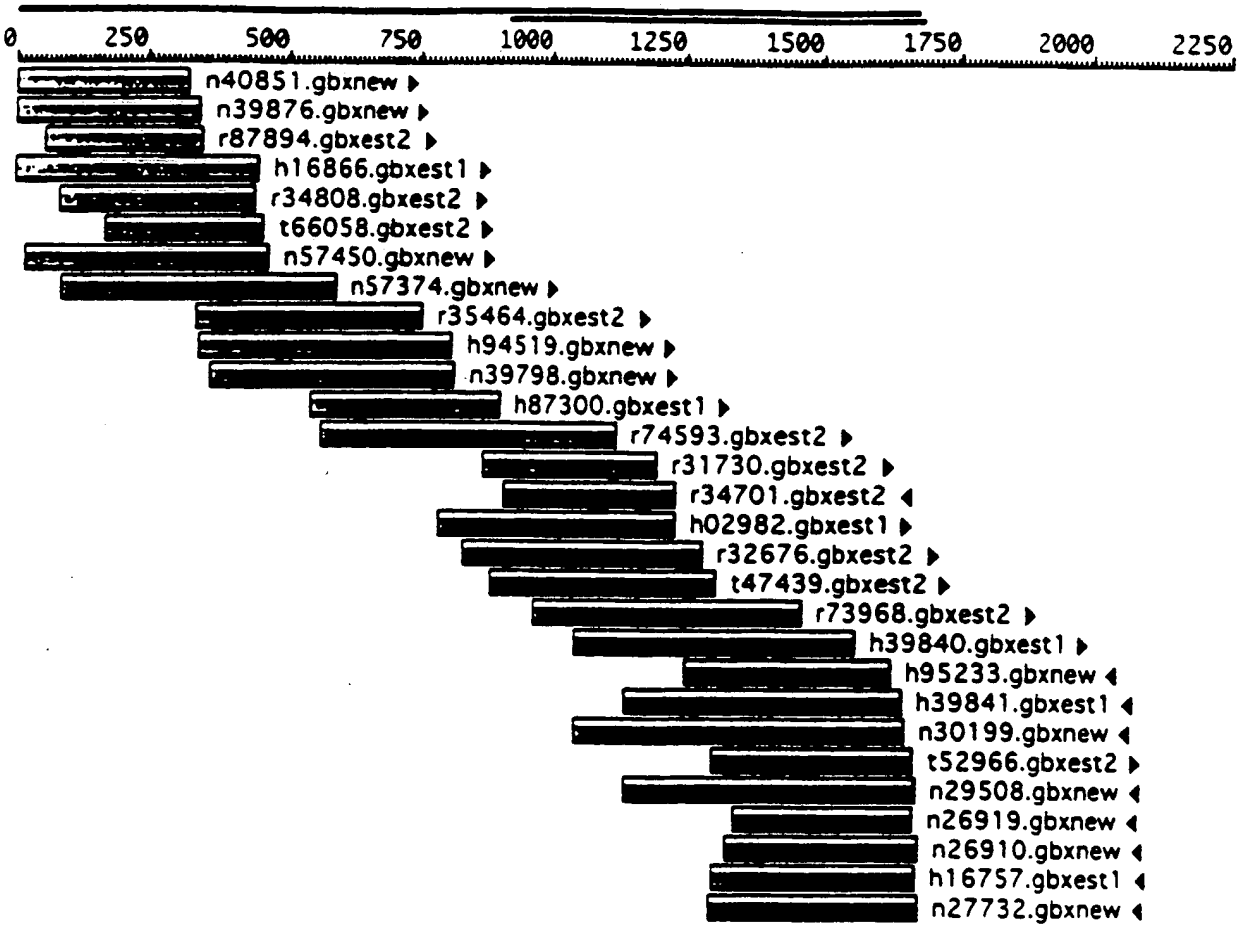
0
250
500
750
1000
1250
1500
1750
2000
2250
n40851.gbxnew
n39876.gbxnew
r87894.gbxest2
h16866.gbxest1
r34808.gbxest2
t66058.gbxest2
n57450.gbxnew
n57374.gbxnew
r35464.gbxest2
h94519.gbxnew
n39798.gbxnew
h87300.gbxest1
r74593.gbxest2
r31730.gbxest2
r34701.gbxest2
h02982.gbxest1
r32676.gbxest2
t47439.gbxest2
r73968.gbxest2
h39840.gbxest1
h95233.gbxnew
h39841.gbxest1
n30199.gbxnew
t52966.gbxest2
n29508.gbxnew
n26919.gbxnew
n26910.gbxnew
h16757.gbxest1
n27732.gbxnew

Figure 4C

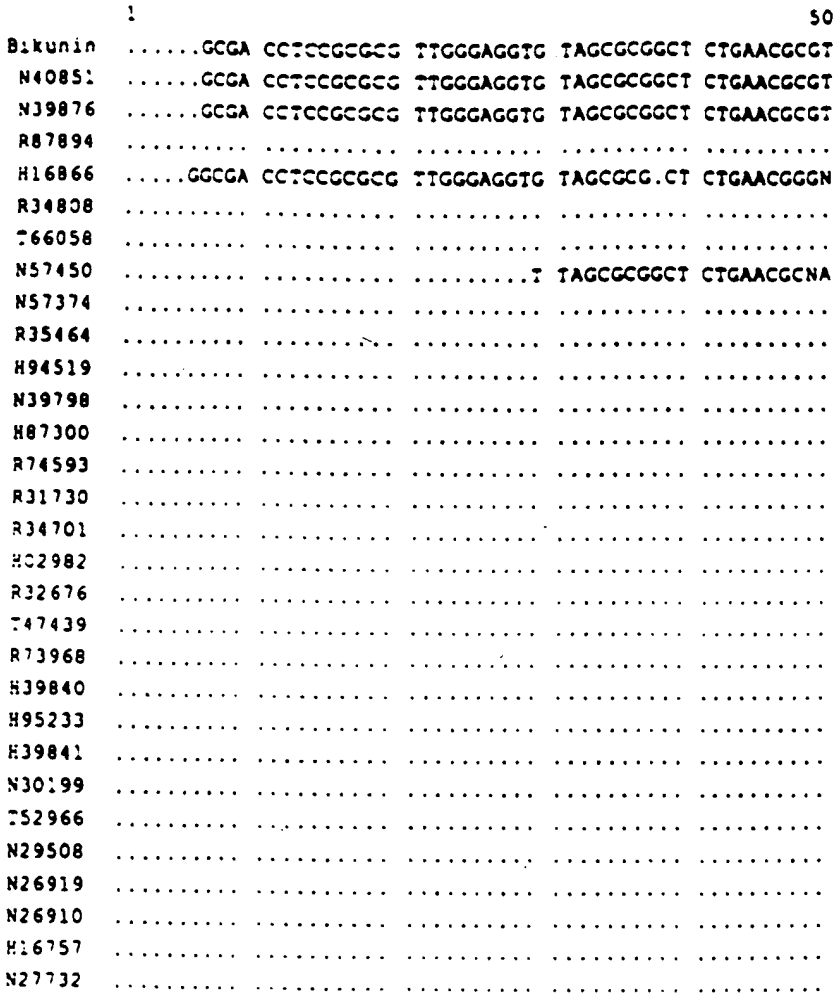

Figure 4C (Con't)

```
          51                                                        100
Bikunin   GNA GGGCCG TTGAGTGTCG CAGGCGGCGA GGGCGCGAGT GAGGAGCAGA
N40851    NGAGNGGCCG TTGAGTGTCG CAGGCGGCGA GGGCGCGAGT GAGGAGCAGA
N39876    GCA.GGGCCG TTGAGTGTCG CAGGCGGCGA GGGCGCGAGT GAGGAGCAGA
R87894    .......... TTGAGTGTNG NAGGCGGCGA GGGCGCGAGT GAGGAGCAGA
H16866    ..ANGGGCCG TTGAGTGTCG CAGGCGGC.A GGGCN.GAGT GAGGAGCAGA
R34808    .......... .......... .......... .........G GAGGAGCAGA
T66058    .......... .......... .......... .......... ..........
N57450    GAAGNGGCCG TTGAGTGTCG CAGGCGGCGA GGGCGCGAGT GAGGAGCAGA
N57374    .......... .......... .......... .......... .......AGA
R35464    .......... .......... .......... .......... ..........
H94519    .......... .......... .......... .......... ..........
N39798    .......... .......... .......... .......... ..........
H87300    .......... .......... .......... .......... ..........
R74593    .......... .......... .......... .......... ..........
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
```

Figure 4C (Con't)

```
         101                                                   150
Bikunin  CCCAGGCATC GCGCGCCGAG AAGNC GGGC GTCCCCACAC TGAAGGTCCG
 N40851  CCCAGGCATC GCGCGCCGAG AAGNC.GGGC GTCCCCACAC TGAAGGTCCG
 N39876  CCCAGGCATC GCGCGCCGAG AAGNC.GGGC NTCCCCACAC TGAAGGTCCG
 R87894  CCCAGGCATC GCGCGCCGAG AAGGCCGGGC GTCCCCACAC TGAAGGTCCG
 H16866  CCCAGGCATC GCGCGCCGAG AAGNC.GGGC GTCCCCACAC TGAAGGTCCG
 R34808  CCCAGGCATC GCGCGCCGAG AAGNC.GGGC GTCCCCACAC TGAAGGTCCG
 T66058  .......... .......... .......... .......... ..........
 N57450  CCCAGGCATC GCGCGCCGAG AAGNC.GGGC GTCCCCACAC TGAAGGTCCG
 N57374  CCCAGGCATC GCGCGCCGAG AAGNC.GGGC GTCCCCACAC TGAAGGTCCG
 R35464  .......... .......... .......... .......... ..........
 H94519  .......... .......... .......... .......... ..........
 N39798  .......... .......... .......... .......... ..........
 H87300  .......... .......... .......... .......... ..........
 R74593  .......... .......... .......... .......... ..........
 R31730  .......... .......... .......... .......... ..........
 R34701  .......... .......... .......... .......... ..........
 H02982  .......... .......... .......... .......... ..........
 R32676  .......... .......... .......... .......... ..........
 T47439  .......... .......... .......... .......... ..........
 R73968  .......... .......... .......... .......... ..........
 H39840  .......... .......... .......... .......... ..........
 H95233  .......... .......... .......... .......... ..........
 H39841  .......... .......... .......... .......... ..........
 N30199  .......... .......... .......... .......... ..........
 T52966  .......... .......... .......... .......... ..........
 N29508  .......... .......... .......... .......... ..........
 N26919  .......... .......... .......... .......... ..........
 N26910  .......... .......... .......... .......... ..........
 H16757  .......... .......... .......... .......... ..........
 N27732  .......... .......... .......... .......... ..........
```

Figure 4C (Con't)

	151				200
Bikunin	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACCCT	CCCGGAGCGT
N40851	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACCCT	CCCGGAGCGT
N39876	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACCCT	CCCGGAGCGT
R87894	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACCCT	CCCGGAGCGT
H16866	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACG.T	CCCGGAGCN.
R34808	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACCCT	CCCGGAGCGT
T66058	....	....	....	...GGACCCT	CCCGGAGCGT
N57450	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACCCT	CCCGGAGCGT
N57374	GAAAGGCGAC	TTCCGGGGGC	TTTGGCACCT	GGCGGACCCT	CCCGGAGCGT
R35464	....	....	....	....	....
H94519	....	....	....	....	....
N39798	....	....	....	....	....
H87300	....	....	....	....	....
R74593	....	....	....	....	....
R31730	....	....	....	....	....
R34701	....	....	....	....	....
H02982	....	....	....	....	....
R32676	....	....	....	....	....
T47439	....	....	....	....	....
R73968	....	....	....	....	....
H39840	....	....	....	....	....
H95233	....	....	....	....	....
H39841	....	....	....	....	....
N30199	....	....	....	....	....
T52966	....	....	....	....	....
N29508	....	....	....	....	....
N26919	....	....	....	....	....
N26910	....	....	....	....	....
H16757	....	....	....	....	....
N27732	....	....	....	....	....

Figure 4C (Con't)

```
         201                                               250
Bikunin  CGGCACCTGA ACGCGAGGCG CTCCATTGCG CGTGCGTTTG .AGGGGCTTC
N40851   CGGCACCTGA ACGCGAGGCG CTCCATTGCG CGTGCGTNTG .AGGGGCTTC
N39876   CGGCACCTGA ACGCGAGGCG CTCCATTGCG CGTGCGTTTG .AGGGGCTTC
R87894   CGGCACCTGA ACGCGAGGCG CTCCATTGCG CGTGCGTTTG .AGGGGCTTC
H16866   .GGCACCTGA ACGCGAGGCG CTCCATTGCG CGTGCGTTTG .AGGGGCTTC
R34808   CGGCACCTGA ACGCGAGGCG CTCCATTGCG CGTGCGTNTG GAGGGGCTTC
T66058   CGGCACCTGA ACGCGAGGC. CTCCATTGCG .GTGCGTGTG NAGGGGCTTC
N57450   CGGCACCTGA ACGCGAGGCG CTCCATTGCG CGTGCGTTTG .AGGGGCTTC
N57374   CGGCACCTGA ACGCGAGGC. CTCCATTGC. CGTGCGTTNG .AGGGGCTTC
R35464   .......... .......... .......... .......... ..........
H94519   .......... .......... .......... .......... ..........
N39798   .......... .......... .......... .......... ..........
H87300   .......... .......... .......... .......... ..........
R74593   .......... .......... .......... .......... ..........
R31730   .......... .......... .......... .......... ..........
R34701   .......... .......... .......... .......... ..........
H02982   .......... .......... .......... .......... ..........
R32676   .......... .......... .......... .......... ..........
T47439   .......... .......... .......... .......... ..........
R73968   .......... .......... .......... .......... ..........
H39840   .......... .......... .......... .......... ..........
H95233   .......... .......... .......... .......... ..........
H39841   .......... .......... .......... .......... ..........
N30199   .......... .......... .......... .......... ..........
T52966   .......... .......... .......... .......... ..........
N29508   .......... .......... .......... .......... ..........
N26919   .......... .......... .......... .......... ..........
N26910   .......... .......... .......... .......... ..........
H16757   .......... .......... .......... .......... ..........
N27732   .......... .......... .......... .......... ..........
```

Figur 4C (C n't)

```
          251                                                       300
Bikunin   CCGCACCT G ATCGCGAGAC CCCAACGGCT GGTGG CGTC GC TG CGCG
 N40851   CCGCACCT.G ATCGCGAGAC CCCAACGGCT GGTGG.CGTC GCCTG.CGCG
 N39876   CCGCACCT.G ATCGCGAGAC CCCAACGGCT GGTGG.CGTC GCCTG.CGCG
 R87894   CCGCACCT.G ATCGCGAGAC CCCAACGGCT GGTNG.CGTC GC.TN.CGCG
 H16866   CCGCACCT.G ATCGCGAGAC CCCAACGGCT GGTNG.CGTC GC.TGGCGCG
 R34808   CCGCACCT.G ATCGCGAGAC CCCAACGGCT GGTGGGCGTC GC.TG.CGCG
 T66058   CCGCACCT.G ATCGCGAGAC CCCAACGGCT GGTGG.CGTC GC.TG.CGCG
 N57450   CCGCACCT.G ATCGCGAGAC CCCAACGGCT GGTGG.CGTC GCCTG.CGCG
 N57374   CCGGAACTTG ATCGCGAGAC CCCAACGGCT GGTGG.CGTC GC.TG.CGCG
 R35464   ..........  ..........  ..........  ..........  ..........
 H94519   ..........  ..........  ..........  ..........  ..........
 N39798   ..........  ..........  ..........  ..........  ..........
 H87300   ..........  ..........  ..........  ..........  ..........
 R74593   ..........  ..........  ..........  ..........  ..........
 R31730   ..........  ..........  ..........  ..........  ..........
 R34701   ..........  ..........  ..........  ..........  ..........
 H02982   ..........  ..........  ..........  ..........  ..........
 R32676   ..........  ..........  ..........  ..........  ..........
 T47439   ..........  ..........  ..........  ..........  ..........
 R73968   ..........  ..........  ..........  ..........  ..........
 H39840   ..........  ..........  ..........  ..........  ..........
 H95233   ..........  ..........  ..........  ..........  ..........
 H39841   ..........  ..........  ..........  ..........  ..........
 N30199   ..........  ..........  ..........  ..........  ..........
 T52966   ..........  ..........  ..........  ..........  ..........
 N29508   ..........  ..........  ..........  ..........  ..........
 N26919   ..........  ..........  ..........  ..........  ..........
 N26910   ..........  ..........  ..........  ..........  ..........
 H16757   ..........  ..........  ..........  ..........  ..........
 N27732   ..........  ..........  ..........  ..........  ..........
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Figure 4C (C n't)

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         301                                                 350
Bikunin  TC TCGGCTG AGCT GGCCA TGGCGCANT  GTTGC GGGC T GAGGC GG
N40851   TC.TCGGCTG AGCT.GGNCA TGTCG
N39876   TC.TCGGCTG AGCT.GGCCA TGGCGCACT. G.TGCGGNGC T.GAGGC.G
R87894   TC.TCGGCTG AGCTTGGCCA TGGCGCANT. GTTNC.GGGC T.NAGGC.GG
H16866   TTCTCGGCTG AGCT.GGCCA TGGCGCANT. GTTGC.GNGC T.GAGGC.GG
R34808   TCTTCGGCTG AGCTGGGCCA TGGCGCANTT GTTGC.GGGC T.GAGGC.GG
T66058   TC.TCGGCTG AGCT.GGCCA TGGCGCANT. GTTGC.GNGC T.GAGGC.GG
N57450   TC.TCGGCTG AGCT.GGCCA TGGCGCANT. GGTGC.GGGC TTGAGGC.GG
N57374   TCCTCGGCTG AGCT.GGCCA TGGCGCANT. GGTGCCGNGC T.GAGGCCGG
R35464   .......... .......... .......... .......... ....GGCCGG
H94519   .......... .......... .......... .......... ..........
N39798   .......... .......... .......... .......... ..........
H87300   .......... .......... .......... .......... ..........
R74593   .......... .......... .......... .......... ..........
R31730   .......... .......... .......... .......... ..........
R34701   .......... .......... .......... .......... ..........
H02982   .......... .......... .......... .......... ..........
R32676   .......... .......... .......... .......... ..........
T47439   .......... .......... .......... .......... ..........
R73968   .......... .......... .......... .......... ..........
H39840   .......... .......... .......... .......... ..........
H95233   .......... .......... .......... .......... ..........
H39841   .......... .......... .......... .......... ..........
N30199   .......... .......... .......... .......... ..........
T52966   .......... .......... .......... .......... ..........
N29508   .......... .......... .......... .......... ..........
N26919   .......... .......... .......... .......... ..........
N26910   .......... .......... .......... .......... ..........
H16757   .......... .......... .......... .......... ..........
N27732   .......... .......... .......... .......... ..........
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Figure 4C (Con't)

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          351                                                       400
Bikunin   AC  GG CG    TTTCTCG  CC TGCTGGG A TCGCT GC T CCTCTCT
R87894    ACG.
H16866    AC..CGNCGT TTTTCTTCG. CCTTGCTGGG ATTCGCTTGC TTCCTNTCTG
R34808    ACGCGGNCG. .TTTTTTCGN CCTTGCTGGG ATTCG.TTG. TTNCTCTCTN
T66058    ...CGGNCG. .TTTTCTCG. CC.TGCTGGG A.TCGCT.GC T.CCTCTCT.
N57450    ANN.NGCCG. ..TTTCTCG. CC.TGCTGGG A.TCGCT.GC T.CCTCTCT.
N57374    AG..GGCCGG ..TTTCTCG. CCTTGCTGGG A.TCGCT.GC T.CCTCTCTG
R35464    .....GTCG. ..TTTCTCG. CCTGGCTGGG A.TCGCT.GC T.CCTCTCT.
H94519    .GCNGCGCG. ..TTNNTCG. CN.TGCTGGG A.TCGCT.GC A.CCTCTCT.
N39798    .......... .......... .....CTGGG ANTCGCT.GC T.CCTCTCT.
H87300    .......... .......... .......... .......... ..........
R74593    .......... .......... .......... .......... ..........
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... ...  ..... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
```

Figure 4C (C n't)

	401				450
Bikunin	GGGG TCCTG G	CGGCCGA CCGA GAACG CA GCA TCC ACGACTT CT			
H16866	GGGGTTCCTG GG.CGGCCGA CCGA.GAACG CA.GCA.TCC AAGAATTTTT				
R34808	GGGGTTC.TG GGGNGGCCGA NCGA.GAACG CAAGCA.TTC ACGA.TTT				
T66058	GGGG.TCCTG G..CGGCCGA CCGA.GAACG CA.GCA.TCC ACGANTT.CT				
N57450	GGGG.TCCTG G..CGGCCGA CCGA.GAACG CA.GCA.TCC ACGACTT.CT				
N57374	GGGG.TCCTG G..CGGCCGA NCGAAGAANG CA.GCAATCC ANGAATTNCT				
R35464	GGGG.TCCTG G.CCGGCCGA CCGA.GAACG CA.GCA.TCC ACGACTT.CT				
H94519	GGGG.TCGNG G..CGGCCGA CCGA.GAACG CA.GCA.TCC ACGACTT.CT				
N39798	GGGG.TCCTG G..CGGCCGA CCGA.GAACG CA.GCA.TCC ACGACTT.CT				
H87300	....				
R74593	....				
R31730	....				
R34701	....				
H02982	....				
R32676	....				
T47439	....				
R73968	....				
H39840	....				
H95233	....				
H39841	....				
N30199	....				
T52966	....				
N29508	....				
N26919	....				
N26910	....				
H16757	....				
N27732	....				

Figure 4C (C n't)

```
          451                                                        500
Bikunin   GCCTGGTGT  CGAAGGT GG TGGGCAGATG CCGGG CCTC CATGCCTA G
H16866    GCC
T66058    TCCTGGTGTT CGAAGG
N57450    GCCTGGTGT. CGAAGGT.GG TGGGCAG
N57374    GCCTGGTGTT CGAAAGTTGG TGGGCANATT CCGGGGCCTT CATGNCTAAG
R35464    GCCTGGTGT. CGAAGGT.GG TGGGCAGATT CCGGG.CCTC CATGCCTA.G
H94519    GCCTGGTGT. CGAAGGT.GG TGGGCAGATG CCGGG.CCTC CATGCCTA.G
N39798    GCCTGGTGT. CGAAGGT.GG TGGGCAGATG CCGGG.CCTC CATGCCTA.G
H87300    .......... .......... .......... .......... ..........
R74593    .......... .......... .......... .......... ..........
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H3984C    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H3984:    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
```

Figure 4C (Con't)

```
          501                                                       550
Bikunin   G TGGT GGT ACAATGTCAC TGACGGATCC TGCCAGCTGT TTGTGT ATG
N57374    GTTGGTTGGT ANAATGTNAA TTAANGATTC TTGCAACTGT TTGTGTNATT
R35464    G.TGGT.GGT ACAATGTCAC TGACGGATCC TGCCAGCTGT TTGTGT.ATG
H94519    G.TGGT.GGT ACAATGTCAC TGACGGATCC TGCCAGCTGT TTGTGT.ATG
N39798    G.TGGT.GGT ACAATGTCAC TGACGGATCC TGCCAGCTGT TTGTGT.ATG
H87300    .......... .......... .......... .......... ..........
R74593    .......... .......... .......... .......... ..........
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........

          551                                                       600
Bikunin   GGGGCTGTGA   CGGAAACA GCAATAATTA CCTGACCAAG GA GGAGTGC
N57374    GGGGCTNTTA AACGGAAANA .CAATAATNA CCTGACCAAA GAAGNAAT..
R35464    GGGGCTGTGA ..CGGAAACA GCAATAATTA CCTGACCAAG GA.GGAGTGC
H94519    GGGGCTGTGA ..CGGAAACA GCAATAATTA CCTGACCAAG GA.GGAGTGC
N39798    GGGGCTGTGA ..CGGAAACA GCAATAATTA CCTGACCAAG GA.GGAGTGC
H87300    GATTCGGCAC AGGGGAAACA GCAATAATTA CCTGACCAAG GA.GGAGTNC
R74593    .......... .......... GCAATAATTA CCTGACCAAG GA.GGAGTGC
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
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Figure 4C (Con't)

```
                601                                                 650
Bikunin   CTCAAGAAAT GTGCCACTGT CACAGAGAAT GCCACGGGTG ACCTGGCCAC
R35464    CTCAAGAAAT GTGCCACTGT CACAGAGAAT GCCACGGGTG ACCTGGCCAC
H94519    CTCAAGAAAT GTGCCACTGT CACAGAGAAT GCCACGGGTG ACCTGGCCAC
N39798    CTCAAGAAAT GTGCCACTGT CACAGAGAAT GCCACGGGTG ACCTGGCCAC
H87300    CTCAAGAAAT GTNCCACTGT CACAGAGAAT GCCACGGGTG ACCTGGCCAC
R74593    CTCAAGAAAT GTGCCACTGT CACAGAGAAT GCCACGGGTG ACCTGGCCAC
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .. ........ ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........

                651                                                 700
Bikunin   CAGCAGGAAT GCAGCGGATT CCTCTGTCCC AAGTGCTCCC AGAAGGCAGG
R35464    CAGCAGGAAT GCAGCGGATT CCTCTGTCCC AAGTGCTCCC AGAAGGCAGG
H94519    CAGCAGGAAT GCAGCGGATT CCTCTGTCCC AAGTGCTCCC AGAAGGCAGG
N39798    CAGCAGGAAT GCAGCGGATT CCTCTGTCCC AAGTGCTCCC AGAAGGCAGG
H87300    CAGCAGGAAT GCAGCGGATT CCTCTGTCCC AAGTGCTCCC AGAAGGCAGG
R74593    CAGCAGGAAT GCAGCGGATT CCTCTGTCCC AAGT.CTCCC AGAAGGCAGG
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
```

Figure 4C (C n't)

```
                701                                                     750
Bikunin   ATTCT GAAG ACCACTCCAG CGATATGTT  CAACTAT  G AAGAATACTG
R35464    ATTCTTGAAG ACCACTTCAG CGATATGTTT CAANTATTGN AAGAATAATT
H94519    ATTCT.GAAG ACCACTCCAG CGATATGTT. CAACTAT..G AAGAATACTG
N39798    ATTCT.GAAG ACCACTCCAG CGATATGTT. CAACTAT..G AAGAATACTG
H87300    ATTCT.GAAG ACCACTCCAG CGATATGTT. CAACTAT..G AAGAATACTG
R74593    ATTCT.GAAG ACCACTCCAG CGATATGTT. CAACTAT..G AAGAATACTG
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........

                751                                                     800
Bikunin    CACCGCCAA CGCAGT CAC TGGGCC TTG CCGTG CAT  CCTT CCCAC
R35464    GCACCGNCAA CGNATT
H94519    GCACCGCCAA CGCATT.CAC TGGGCC..TG C.GTG.CAT. CCTT.CCCAC
N39798    .CACCGCCAA CGCAGT.CAC TGGGGCCTTG C.GTGGAAT. CCTTTCCCAC
H87300    .CACCGCCAA CGCAGTNCAC TGGGCC.TTG C.GTGGCATN CCTT.CCCAC
R74593    .CACCGCCAA CGCAGT.CAC TGGGCC.TTG CCGTG.CAT. CCTT.CCCAC
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... .......... .......... .......... ..........
R32676    .......... .......... .......... .......... ..........
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
```

Figure 4C (C n't)

```
          801                                                       850
Bikunin   GCTGGTACTT T GACGTGGA GA GGAACTC CTG CAATAA CTTCATCTAT
H94519    GCTGGTACTT T.GNCGT
N39798    GCTGGNAATT TNGACGTTGA GAAGGAAC
H87300    GCTNGTACTT T.GACGTGGA GA.GGAACTC CTGGCAATAA CTTCATCTAT
R74593    GCTGGTACTT T.GACGTGGA GA.GGAACTC CTG.CAATAA CTTCATCTAT
R31730    .......... .......... .......... .......... ..........
R34701    .......... .......... .......... .......... ..........
H02982    .......... ........GA GA.GGAACTC CTG.CAATAA CTTCATCTAT
R32676    .......... .......... .......... .........G ATTC..GGAA
T47439    .......... .......... .......... .......... ..........
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........

          851                                                       900
Bikunin   GGAGGCT GC CGGGGCAAT  AAGAACAG C TACCGCTC T GAGGAGGCCT
H87300    GGAGGCTTGC CGGGGCAATN AAGAACAGNT TACCGCTCTT TAGGAGGCCT
R74593    GGAGGCT.GC CGGGGCAAT. AAGAACAG.C TACCGCTC.T GAGGAGGCCT
R31730    .......... .......... .......G.C TACCGCTC.T GAGGAGGCCT
R34701    .......... .......... .......... .......... ..........
H02982    GGNGGCT.GC CGGGG.AAT. AAGAACA.NC TACCGCTC.T GAGGAGGCCT
R32676    CGAGGA..GC CGGGGCAAT. AAGAACAG.C TACCGCTC.T GAGGAGGCCT
T47439    .......... .......... .......... .......... ....NGGCCT
R73968    .......... .......... .......... .......... ..........
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
```

Figure 4C (Con't)

```
          901                                                                 950
Bikunin    GCA TGCTC CGCTGCTTCC GC                                        CA GCAGGA
H87300    .GCA.T.... .
R74593    .GCA.TGCTC CGCTGCTTCC GC..... ..... .CA.GCAGGA
R31730    .GCA.TGCTC CGCTGCTTCC GC..... ..... .CA.GCAGGA
R34701    ..... .....TTCC GC..... ..... .CAAGCAGGA
H02982    .GCG.TGCTC CGCTGCTTCC GCTGTGTGTT CTCTTCCAGG CCA.GCAGGA
R32676    .GCA.TGCTC CGCTGCTTCC GC..... ..... .CA.GCAGGA
T47439    TGCAGTGCTC CGCTGCTTCC GC..... ..... .CA.GCAGGA
R73968    ..... ..... ..... ..... .....
H39840    ..... ..... ..... ..... .....
H95233    ..... ..... ..... ..... .....
H39841    ..... ..... ..... ..... .....
N30199    ..... ..... ..... ..... .....
T52966    ..... ..... ..... ..... .....
N29508    ..... ..... ..... ..... .....
N26919    ..... ..... ..... ..... .....
N26910    ..... ..... ..... ..... .....
H16757    ..... ..... ..... ..... .....
N27732    ..... ..... ..... ..... .....

          951                                                                1000
Bikunin   GAA TCCTCC CCTGCCCCTT GGCTCAAAGG TGGTGGTTC  TGG CGGGGC
R74593    GAA.TCCTCC CCTGCCCCTT GGCTCAAAGG TGGTGGTTC. TGGCGGGGC
R31730    GAA.TCCTCC CCTGCCCCTT GGCTCAAAGG TGGTGGTTC. TGG.CGGGGC
R34701    AAANTCCTCC CCTCCCCCTT GGCTCAAAGG TGGTGGTTCC TGG.CGGGGC
H02982    GAA.TCCTCC CCTGCCCCTT GGCTCAAAGG TGGTGGTTC. TGG.CGGGGC
R32676    GAA.TCCTCC CCTGCCCCTT GGCTCAAAGG TGGTGGTTC. TGG.CGGGGC
T47439    GAA.TCCTCC CCTGCCCCTT GGCTCAAAGG TGGTGGTTC. TGG.CGGGGC
R73968    ..... ..... ..... ..... ....CGGGGC
H39840    ..... ..... ..... ..... .....
H95233    ..... ..... ..... ..... .....
H39841    ..... ..... ..... ..... .....
N30199    ..... ..... ..... ..... .....
T52966    ..... ..... ..... ..... .....
N29508    ..... ..... ..... ..... .....
N26919    ..... ..... ..... ..... .....
N26910    ..... ..... ..... ..... .....
H16757    ..... ..... ..... ..... .....
N27732    ..... ..... ..... ..... .....
```

Figure 4C (Con't)

```
          1001                                                      1050
Bikunin   TGTT CGTGA TGGTGTTGAT CC T CTTCC TGGG AGCCT CC ATGGTC
R74593    TGTTTCGTGA TGGTGTTGAT CCTT..TTCC TGGGGAGCNT CC.ATGGTCT
R31730    TGTT.CGTGA TGGTGTTGAT CC.T.CTTCC TGGGGAGCCT CC.ATGGTC.
R34701    TGTT.CGTGA TGGTGTTGAT CCCTCCTTCC CGGG.AGCCT CCCATGGTCC
H02982    TGTT.CGTGA TGGTGTTGAT CC.T.CTTCC TGGG.AGCCT CC.ATGGTN.
R32676    TGTT.CGTGA TGGTGTTGAT CC.T.CTTCC TGGG.AGCCT CC.ATGGTC.
T47439    TGTT.CGTGA TGGTGTTGAT CC.T.CTTCC TGGG.AGCCT CC.ATGGTC.
R73968    TGTT.CGTGA TGGTGTTGAT CC.T.CTTCC TGGG.AGCCT CC.ATGGTC.
H39840    .......... .......... .......... .......... ..........
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... .......... .......... ..........
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .... ..... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........

          1051                                                      1100
Bikunin   TACC TGAT  CCGGGTGGCA CGGAGG AAC C AGG AGCG TGCCCTGCGC
R74593    TAC..TGATT CCGGGTGGCA AGGAGG.AAC C.AGG.AGCG TGCCCTGCGC
R31730    TACC.TGAT. CCGGGTGGCA CGGAGGGAAC C.AGGGAGCG TGCCCTGCGC
R34701    TACCCTGAT. CCGGGTGGCA CGGAGG.AAC CCAGG.ANCG TGCCCTGCGC
H02982    TACC.TGAT. CCGGGTNGCA CGGAGG.AAC C.AGGGAGCG TGCCCTGCGN
R32676    TACC.TGAT. CCGGGTGGCA CGGAGG.AAC C.AGGGAGCG TGCCCTGCGC
T47439    TACC.TGAT. CCGGGTNGCA CGGAGG.AAC C.AGG.AGCG TGCCCTGCGC
R73968    TACC.TGAT. CCGGGTGGCA CGGAGG.AAC C.AGG.AGCG TGCCCTGCGC
H39840    .......... .......... ...GGG.AAC C.AGG.AGCG TGCCCTGCGC
H95233    .......... .......... .......... .......... ..........
H39841    .......... .......... .......... .......... ..........
N30199    .......... .......... ..GAGGAACC C.ANG.AGCT TGCCCTGCGC
T52966    .......... .......... .......... .......... ..........
N29508    .......... .......... .......... .......... ..........
N26919    .......... .......... .......... .......... ..........
N26910    .......... .......... .......... .......... ..........
H16757    .......... .......... .......... .......... ..........
N27732    .......... .......... .......... .......... ..........
```

Figure 4C (Con't)

	1101				1150
Bikunin	ACCG TCT G	GAGCTCCGGA	GATGACAAGG	AGCAGCTGG	TGAAGAAC
R74593	ANCG.TCT.G	GAGCTTCGGA	GATGACAAGG	GNT	
R31730	ACCG.TCTGG	GAGCTCCGGA	GATGACAAGG	GAGCAGCTGG	GTGAAGAAC.
R34701	ACCG.TCT.G	GAGCTCCGGA	GATGACAAGG	.AGCAGCTGG	.TGAAGAAC.
H02982	ACCG.TCTNG	GAGCTCCGGA	GATGACAAGG	.AGCAGCTGG	.TGAAGAAC.
R32676	ACCG.TCTGG	GAGCTCCGGA	GATGACAAGG	GAGCAGCTGG	.TGAAGAAC.
T47439	ACCG.TCT.G	GAGCTCCGGA	GATGACAAGG	.AGCAGCTGG	.TGAAGAAC.
R73968	ACCG.TCT.G	GAGCTCCGGA	GATGACAAGG	.AGCAGCTGG	.TGAAGAAC.
H39840	ACCGGTCT.G	GAGCTCCGGA	GATGACAAGG	.AGCAGCTGG	.TGAAGAAC.
H95233	....	....	....	....	....
H39841	....	....	....	....	....
N30199	ACCG.TCT.G	GAGCTCCGGA	GATNACAANG	.AGCAGCTGN	.TGAAGAACC
T52966	....	....	....	....	....
N29508	....	....	....	....	....
N26919	....	....	....	....	....
N26910	....	....	....	....	....
H16757	....	....	....	....	....
N27732	....	....	....	....	....

	1151				1200
Bikunin	ACATATGT C	CTGT GACCG	CCCTGT CGC	C AAGAGG A	CT GGGGAA
R31730	ACATATGTTC	CTGTTGACCG	NCCTGTTCGC	C.AAGAGG.A	TTGGGGGAA.
R34701	ACATATGT.C	CTGT.GACCG	CCCTGT.CGC	C.AAGAGG.A	CT.GGGGAA.
H02982	ACATATGT.C	CTGT.GACCG	NCCTGTTCGN	C.AAGAGG.A	CT.GGGGAA.
R32676	ACATATGTTC	CTGTTGACCG	CCCTGTTCGC	C.AAGAGG.A	CTNGGGGAAA
T47439	ACATATGT.C	CTGT.GACCG	CCCTGT.CGC	C.AAGAGGGA	NTGGGGGAA.
R73968	ACATATGT.C	CTGT.GACCG	CCCTGT.CGC	C.AAGAGG.A	CT.GGGGAA.
H39840	ACATATGT.C	CTGT.GACCG	CCCTGT.CGC	C.AAGAGG.A	CT.GGGGAA.
H95233	....	....	....	C.AAGAGG.A	CT.NGGGAA.
H39841	....	........C.	CCCTGT.CGC	CCAAAAGG.A	CT.GGGGAA.
N30199	ACATATGT.C	CTGT.GACCG	CCCTNT.CGC	C.AAGAGG.A	CT.GGGNAAA
T52966	....	....	....	....	....
N29508	....	.......CC.	CCCTNT.CGC	C.AAGAGG.A	CT.GGG.AA.
N26919	....	....	....	....	....
N26910	....	....	....	....	....
H16757	....	....	....	....	....
N27732	....	....	....	....	....

Figure 4C (C n't)

```
         1201                                              1250
Bikunin   GGGAGGGG  AGACTAT G  TGT GA GCT TTTTTT  AA A TAGA  GG
R31730   .GGGAGGGGG A
R34701   .GGGAGGGG. AGACTAT.G. TGT.GA.GCT TTTTTT..AA A.TA
H02982   GGGGAGGGG. AGATTAT.G. TGTTGA.GTT TTTTTT..AA ANTAG
R32676   GGGGAGGGGG AGANTATTGT TGTTGA.GNT TTTTTTTAAA ATTAGGAGGG
T47439   .GGGAGGGG. AGACTAT.G. TGT.GA.GCT TTTTTT..AA A.TAGA..GG
R73968   .GGGAGGGG. AGACTAT.G. TGT.GA.GCT TTTTTT..AA A.TAGA..GG
H39840   .GGGAGGGG. AGACTAT.G. TGT.GA.GCT TTTTTT..AA A.TAGA..GG
H95233   .......... .......... .......... .......... ..........
H39841   .GGGAGGGGA AAACNAT.G. TGT.GAACCT TTTTTT.AAA A.TAGA..GG
N30199   .GGGAGGNG. AGACTAT.G. TGT.AA.GCT TTTTTT..AA A.TAGA..GG
T52966   .......... .......... .......... .......... ..........
N29508   .GGGAGGGG. AGACTA..G. TGT.GA.GCT TTTTTT..AA A.TAGA..GG
N26919   .......... .......... .......... .......... ..........
N26910   .......... .......... .......... .......... ..........
H16757   .......... .......... .......... .......... ..........
N27732   .......... .......... .......... .......... ..........

         1251                                              1300
Bikunin  GATTGACTC  GGATTTG A GT GATC A  TTAGGG  CT GAGGTCTGTT
R32676   GNTTGANTTC GGGNTTTTNA GTTGATCCAT TTAGGGGGNT GAG
T47439   GATTGACTC. .GGATTTG.A GT.GATC.A. TTAGGG..CT GAGGTCTNTT
R73968   GATTGACTC. .GGATTTG.A GT.GATC.A. TTAGGG..CT GAGGTCTNTT
H39840   GATTGACTC. .GGATTTG.A GT.GATC.A. TTAGGG..CT GAGGTCTGTT
H95233   .......... .......... ........A. TTAGGG..CT GAGGTCTGTT
H39841   GATTGACTC. .GGATTTG.A GT.GATC.A. TTAGGG..CT GAGGTCTGTT
N30199   GATTGACTC. .GGATTTGGA GT.GATC.A. TTAGGG..CT GAGGTCTGTT
T52966   .......... .......... .......... .......... ..........
N29508   GATTGACTC. .GGATTTG.A GT.GATCNA. TTAGGG..CT GAGGTCTGTT
N26919   .......... .......... .......... .......... ..........
N26910   .......... .......... .......... .......... ..........
H16757   .......... .......... .......... .......... ..........
N27732   .......... .......... .......... .......... ..........

         1301                                              1350
Bikunin  TCTCTGGGAG GTAGGACGGC TGCTTCC TG G TC TGGCA  GGGATGGG
T47439   TCTCTNGGAG GTAGGACGA
R73968   TCTCTGGGAG GTAGGACGGC TGCTTCC.TG GGTCTTGGCA .GGGATGGGG
H39840   TCTCTGGGAG GTAGGACGGC TGCTTCC.TG G.TC.TGGCA .GGGATGGG.
H95233   NCTCTGGGAG NTAGGACGGC TGCCTTCCTG G.TC.TGGCA .GGGATGGG.
H39841   TCNCTGGGAG GTAGGACGGC TGCTCCCCTG G.TC.TGGCA .GGGATGGG.
N30199   TCTCTGGGAG GTAGGACGGC TGCTTCC.TG G.TC.TGGCA .GGGATGGG.
T52966   .......... .......... .......... ..TC.TGGCA .GGGATGGG.
N29508   TCTCTGGGAG GTAGGACGGC TGCTTCA.TG G.TC.TGGCA .GGGATGGG.
N26919   .......... .......... .......... .......... ..........
N26910   .......... .......... .......... .......... ..........
H16757   .......... .......... .........G G.TC.TGGCA .GGGATGGG.
N27732   .......... .......... .....CCCTG GGTCCTGNCA AGGNATGGGG
```

Figure 4C (Con't)

```
          1351                                                      1400
Bikunin   TTTG CTTTG G AAATCCTC T AGGAGGCT CCTCCT CGC ATGG CC TG
R73968    TTTG.CTTTG GGAAATCCTC TTNGGAGGCT CCTCCTTCGC ATGGGCCTTG
H39840    TTTG.CTTTG GAGAATCCTC T.ANGAGGCT CCTCCT.CGC ATGG.CC.TG
H95233    TTTG.CTTTG G.AAATCCTC T.AGGAGGCT CCTCCT.CGC ATGG.CC.TG
H39841    TTTG.CTTTG G.AAANCCNC T.AGGAGGCT CCTCCT.CGC ATGG.CC.TG
N30199    TTTG.CTTTG G.AAATCCTC T.AGGAGGCT CCTCCTTCGC ATGG.CC.TG
T52966    TTTG.CTTTG G.AAATCCTC T.AGGAGGCT CCTCCT.CGC ATGG.CC.TG
N29508    TTTG.CTTTG G.AAATCCTC T.AGGAGGCT CCTCCT.CGC ATGG.CC.TG
N26919    .......... .......... ....GAGGCT CCTCCT.CGC ATGG.CC.TG
N26910    .....CTTTT GNAAATCCTC T.AGGAGGCT CCTCCT.CGC ATGG.CC.TG
H16757    TTTGCCTTTG G.AAANCCTC T.AGGAGGCT CCTCCT.CGC ATGG.CC.TG
N27732    TTTG.CTTTG G.AAATCCTC TTAGGAGGCT CCTCCT.CGC ATGG.CC.TG

          1401                                                      1450
Bikunin   CAGT CT GG CAGCAG CCC CGAGTTGTTT  CC TCGCTG ATC GATTTC
R73968    CAGT.CTNGG CAGCANCCCC CGAGTTTTTT TCCTTCGCTG ATCCGATTTC
H39840    CAGT.CT.GG CAGCAG.CCC CGAGTTGTTT .CC.TCGCTG ATC.GATTTC
H95233    CAGTTCT..G CAGCAG.CCC CGAGTTGTTT .CC.TCGCTG ATC.GATTTC
H39841    CAGT.CT.GG CAGCAG.CCC CGAGTTGTTN .CC.TCGCTG ATC.GATNTC
N30199    CAGT.CT.GG CAGCAG.CCC CGAGTTGTTT .CC.TCGCTG ATC.GATTTC
T52966    CAGT.CT.GG CAGCAG..CC CGAGTTGTTT .CC.TCGCTG ATC.GATTTC
N29508    CAGT.CT..G CAGCAG.CCC CGAGTTGTTT .CC.TCGCTG ATC.GATTTC
N26919    CAGT.CTTGG CAGCAG.CCC CGAGTTGTTT .CC.TCGCTG ANC.GATTTC
N26910    CAGT.CT..G CAGCAG.CCC CGAGTTGTTT .CC.TCGCTG ATCGGATTTC
H16757    CAGTNCT.GG CAGCAGACCC CGAGTTGTTT .CC.TCGCTG ATC.GATTTC
N27732    CAGT.CT.GG CAGCAG.CCC CGAGTTGTTT .CC.TCGCTG ANC.GATTTC

          1451                                                      1500
Bikunin   TTT CCTCCA GGTAG  AGT TTTC TTTG  CTTATGTTGA ATTCCATTGC
R73968    TTTTCCTCCA GGTAAGAATT TTTCTTTT
H39840    TTT.CCTCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
H95233    TTT.CCTCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
H39841    TTT.CCCCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ANTCCATTGC
N30199    TTT.CCTCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
T52966    TTT.CCTCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
N29508    TTT.CCTCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
N26919    TTT.CCNCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
N26910    TTT.CCTCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
H16757    TTTACCCCCA GGTAG..AGT TTTCCTTTGN CTTATGTTGA ATTCCATTGC
N27732    TTT.CCTCCA GGTAG..AGT TTTC.TTTG. CTTATGTTGA ATTCCATTGC
```

Figur 4C (Con't)

```
          1501                                                      1550
Bikunin   CTCTTTT CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT GT
 H39840   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTTTGT
 H95233   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 H39841   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 N30199   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 T52966   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 N29508   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 N26919   CTCTTTT.CN CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 N26910   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 H16757   CTCTTTTACT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT
 N27732   CTCTTTT.CT CATCACAGAA GTGATGTTGG AATCGTTTCT TTTGTTT.GT

          1551                                                      1600
Bikunin   CTGATTTATG G  TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 H39840   CTGATTTATG GGTTTTTTTT AAGTAT
 H95233   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 H39841   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 N30199   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 T52966   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 N29508   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 N26919   CTGATTTATG G..TTTTTTT AAGTNTAAAC AAAAGTTTTT TATTAGCATT
 N26910   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 H16757   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT
 N27732   CTGATTTATG G..TTTTTTT AAGTATAAAC AAAAGTTTTT TATTAGCATT

          1601                                                      1650
Bikunin   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 H95233   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAA
 H39841   CTGAAAGAAG GAAAGTAAAN TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 N30199   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 T52966   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 N29508   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 N26919   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 N26910   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 H16757   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC
 N27732   CTGAAAGAAG GAAAGTAAAA TGTACAAGTT TAATAAAAAG GGGCCTTCCC

          1651                                        1689
Bikunin   CTTTAG AAT AAAAAAAAAA AAAAAAAAAA AAAAAAAAA
 H39841   CTTTAA.
 N30199   CTTTAG.AAT AAA
 T52966   CTTTAGGAAT NAAAANAAAA AAGGGTG
 N29508   CTTTAG.AAT AAATTTCAGC ATGTGCTTTC AA
 N26919   CTTTAG.AAT AAAAAAAAAA AAAAAAAAAA A
 N26910   CTTTAG.AAT AAATTTCAGC ATGTGCTTTC AAAAAA
 H16757   CTTTAG.AAT AAAAAAAAAA AAAAAAAAAA AAAAAA
 N27732   CTTTAG.AAT AAAAAAAAAA AAAAAAAAAA AAAAAAAAA
```

FIGURE 4D


```
EST c nsens MLRAEADGVS RLLGSLLLSG VLAADRERSI HDFCLVSKVV GRCRASMPRW  50
EST consens WYNVTDGSCQ LFVYGGCDGN SNNYLTKEEC LKKCATVTEN ATGDLATSRN 100
EST consens AADSSVPSAP RRQDSEDHSS DMFNYEEYCT ANAVTGPCRA SFPRWYFDVE 150
EST consens RNSCNNFIYG GCRGNKNSYR SEEACMLRCF RQQENPPLPL GSKVVVLAGL 200
EST consens FVMVLILFLG ASMVYLIRVA RRNQERALRT VWSSGDDKEQ LVKNTYVL   248
```

FIGURE 4E


```
cDNA                                                                ACC   3
translation                                                         T    -47

cDNA          TGATCGCGAG ACCCCAACGG CTGGTGGCGT CGCCTGCGCG TCTCGGCTGA  53
translation    .  S  R  D   P  N  G   W  W  R   R  L  R  V   S  A  E  -30

cDNA          GCTGGCCATG GCGCAGCTGT GCGGGCTGAG GCGGAGCCGG GCGTTTCTCG 103
translation    L  A  M   A  Q  L  C   G  L  R   R  S  R  A   F  L  A-13

cDNA          CCCTGCTGGG ATCGCTGCTC CTCTCTGGGG TCCTGGCGGC CGACCGAGAA 153
translation    L  L  G   S  L  L   L  S  G  V   L  A  A  D   R  E    4

cDNA          CGCAGCATCC ACGACTTCTG CCTGGTGTCG AAGGTGGTGG GCAGATGCCG 203
translation   R  S  I  H   D  F  C   L  V  S   K  V  V  G   R  C  R   21

cDNA          GGCCTCCATG CCTAGGTGGT GGTACAATGT CACTGACGGA TCCTGCCAGC 253
translation    A  S  M   P  R  W  W   Y  N  V   T  D  G   S  C  Q  L  38

cDNA          TGTTTGTGTA TGGGGGCTGT GACGGAAACA GCAATAATTA CCTGACCAAG 303
translation    F  V  Y   G  G  C   D  G  N  S   N  N  Y   L  T  K   54

cDNA          GAGGAGTGCC TCAAGAAATG TGCCACTGTC ACAGAGAATG CCACGGGTGA 353
translation   E  E  C  L   K  K  C   A  T  V   T  E  N  A   T  G  D   71

cDNA          CCTGGCCACC AGCAGGAATG CAGCGGATTC CTCTGTCCCA AGTGCTCCCA 403
translation    L  A  T   S  R  N  A   A  D  S   S  V  P   S  A  P  R  88

cDNA          GAAGGCAGGA TTCTGAAGAC CACTCCAGCG ATATGTTCAA CTATGAAGAA 453
translation    R  Q  D   S  E  D   H  S  S  D   M  F  N   Y  E  E   104

cDNA          TACTGCACCG CCAACGCAGT CACTGGGCCT TGCCGTGCAT CCTTCCCACG 503
translation   Y  C  T  A   N  A  V   T  G  P   C  R  A  S   F  P  R   121

cDNA          CTGGTACTTT GACGTGGAGA GGAACTCCTG CAATAACTTC ATCTATGGAG 553
translation    W  Y  F   D  V  E  R   N  S  C   N  N  F   I  Y  G  G  138

cDNA          GCTGCCGGGG CAATAAGAAC AGCTACCGCT CTGAGGAGGC CTGCATGCTC 603
translation    C  R  G   N  K  N   S  Y  R  S   E  E  A   C  M  L   154

cDNA          CGCTGCTTCC GCCAGCAGGA GAATCCTCCC CTGCCCCTTG GCTCAAAGGT 653
translation   R  C  F  R   Q  Q  E   N  P  P   L  P  L  G   S  K  V   171

cDNA          GGTGGTTCTG GCGGGGCTGT TCGTGATGGT GTTGATCCTC TTCCTGGGAG 703
translation   V  V  L  A   G  L  F   V  M  V   L  I  L  F   L  G  A   188

cDNA          CCTCCATGGT CTACCTGATC CGGGTGGCAC GGAGGAACCA GGAGCGTGCC 753
translation    S  M  V  Y   L  I   R  V  A  R   R  N  Q  E   R  A   204

cDNA          CTGCGCACCG TCTGGAGCTT CGGAGATGA                        782
translation   L  R  T  V   W  S  F   G  D                           213
```

FIGURE 4F


```
cDNA          GCACGAGTTG GGAGGTGTAG CGCGGCTCTG AACGCGCTGA GGGCCGTTGA  50
cDNA          GTGTCGCAGG CGGCGAGGGC GCGAGTGAGG AGCAGACCCA GGCATCGCGC 100
cDNA          GCCGAGAAGG CCGGGCGTCC CCACACTGAA GGTCCGGAAA GGCGACTTCC 150
cDNA          GGGGGCTTTG GCACCTGGCG GACCCTCCCG GAGCGTCGGC ACCTGAACGC 200
cDNA          GAGGCGCTCC ATTGCGCGTG CGCGTTGAGG GGCTTCCCGC ACCTGATCGC 250
cDNA          GAGACCCCAA CGGCTGGTGG CGTCGCCTGC GCGTCTCGGC TGAGCTGGCC 300
cDNA          ATGGCGCAGC TGTGCGGGCT GAGGCGGAGC CGGGCGTTTC TCGCCCTGCT 350
translation   M  A  Q  L     C  G  L     R  R  S     R  A  F  L     A  L  L  -11

cDNA          GGGATCGCTG CTCCTCTCTG GGGTCCTGGC GGCCGACCGA GAACGCAGCA 400
translation   G  S  L     L  L  S  G     V  L  A     A  D  R     E  R  S  I   7

cDNA          TCCACGACTT CTGCCTGGTG TCGAAGGTGG TGGGCAGATG CCGGGCCTCC 450
translation      H  D  F     C  L  V     S  K  V  V     G  R  C     R  A  S   23

cDNA          ATGCCTAGGT GGTGGTACAA TGTCACTGAC GGATCCTGCC AGCTGTTTGT 500
translation   M  P  R  W     W  Y  N     V  T  D     G  S  C  Q     L  F  V   40

cDNA          GTATGGGGGC TGTGACGGAA ACAGCAATAA TTACCTGACC AAGGAGGAGT 550
translation   Y  G  G     C  D  G  N     S  N  N     Y  L  T     K  E  E  C   57

cDNA          GCCTCAAGAA ATGTGCCACT GTCACAGAGA ATGCCACGGG TGACCTGGCC 600
translation      L  K  K     C  A  T     V  T  E  N     A  T  G     D  L  A   73

cDNA          ACCAGCAGGA ATGCAGCGGA TTCCTCTGTC CCAAGTGCTC CCAGAAGGCA 650
translation   T  S  R  N     A  A  D     S  S  V     P  S  A  P     R  R  Q   90

cDNA          GGATTCTGAA GACCACTCCA GCGATATGTT CAACTATGAA GAATACTGCA 700
translation   D  S  E     D  H  S  S     D  M  F     N  Y  E     E  Y  C  T 107

cDNA          CCGCCAACGC AGTCACTGGG CCTTGCCGTG CATCCTTCCC ACGCTGGTAC 750
translation      A  N  A     V  T  G     P  C  R  A     S  F  P     R  W  Y  123

cDNA          TTTGACGTGG AGAGGAACTC CTGCAATAAC TTCATCTATG GAGGCTGCCG 800
translation   F  D  V  E     R  N  S     C  N  N     F  I  Y  G     G  C  R  140

cDNA          GGGCAATAAG AACAGCTACC GCTCTGAGGA GGCCTGCATG CTCCGCTGCT 850
translation   G  N  K     N  S  Y  R     S  E  E     A  C  M     L  R  C  F 157

cDNA          TCCGCCAGCA GGAGAATCCT CCCCTGCCCC TTGGCTCAAA GGTGGTGGTT 900
translation      R  Q  Q     E  N  P     P  L  P  L     G  S  K     V  V  V  173

cDNA          CTGGCGGGGC TGTTCGTGAT GGTGTTGATC CTCTTCCTGG GAGCCTCCAT 950
translation   L  A  G  L     F  V  M     V  L  I     L  F  L  G     A  S  M  190

cDNA          GGTCTACCTG ATCCGGGTGG CACGGAGGAA CCAGGAGCGT GCCCTGCGCA 1000
translation   V  Y  L  I     R  V  A     R  R  N     Q  E  R     A  L  R  T 207

cDNA          CCGTCTGGAG CTCCGGAGAT GACAAGGAGC AGCTGGTGAA GAACACATAT 1050
translation      V  W  S     S  G  D     D  K  E  Q     L  V  K     N  T  Y  223

cDNA          GTCCTGTGAC CGCCCTGTCG CCAAGAGGAC TGGGGAAGGG AGGGGAGACT 1100
translation   V  L  *                                                    225
```

FIGURE 4F (Con't)


```
cDNA        ATGTGTGAGC TTTTTTTAAA TAGAGGGATT GACTCGGATT TGAGTGATCA 1150
cDNA        TTAGGGCTGA GGTCTGTTTC TCTGGGAGGT AGGACGGCTG CTTCCTGGTC 1200
cDNA        TGGCAGGGAT GGGTTTGCTT TGGAAATCCT CTAGGAGGCT CCTCCTCGCA 1250
cDNA        TGGCCTGCAG TCTGGCAGCA GCCCCGAGTT GTTTCCTCGC TGATCGATTT 1300
cDNA        CTTTCCTCCA GGTAGAGTTT TCTTTGCTTA TGTTGAATTC CATTGCCTCC 1350
cDNA        TTTTCTCNAT CACAGAAGTG ATGTTGGAAT CGTTTCTTTT GTTTGTCTGA 1400
cDNA        TTTATGGTTT TTTTAAGTAT AAACAAAAGT TTTTTATTAG CATTCTGAAA 1450
cDNA        GAAGGAAAGT AAAATGTACA AGTTTAATAA AAAGGGGCCT TCCCCTTTAG 1500
cDNA        AATAAATTTC CAGCATGTTG CTTTCAAAAA AAAAAAAAAA AAAA
1550
```

FIGURE 4G


```
EST cons ns                                                MLR AEADGVSRLL GSLLLSGVLA  -1
PCR clone                                                MAQLCGL RRSRAFLALL GSLLLSGVLA  -1
λcDNA clone                                              MAQLCGL RRSRAFLALL GSLLLSGVLA  -1

EST consens ADRERSIHDF CLVSKVVGRC RASMPRWWYN VTDGSCQLFV YGGCDGNSNN  50
PCR clone   ADRERSIHDF CLVSKVVGRC RASMPRWWYN VTDGSCQLFV YGGCDGNSNN  50
λcDNA clone ADRERSIHDF CLVSKVVGRC RASMPRWWYN VTDGSCQLFV YGGCDGNSNN  50

EST consens YLTKEECLKK CATVTENATG DLATSRNAAD SSVPSAPRRQ DSEDHSSDMF 100
PCR clone   YLTKEECLKK CATVTENATG DLATSRNAAD SSVPSAPRRQ DSEDHSSDMF 100
λcDNA clone YLTKEECLKK CATVTENATG DLATSRNAAD SSVPSAPRRQ DSEDHSSDMF 100

EST consens NYEEYCTANA VTGPCRASFP RWYFDVERNS CNNFIYGGCR GNKNSYRSEE 150
PCR clone   NYEEYCTANA VTGPCRASFP RWYFDVERNS CNNFIYGGCR GNKNSYRSEE 150
λcDNA clone NYEEYCTANA VTGPCRASFP RWYFDVERNS CNNFIYGGCR GNKNSYRSEE 150

EST consens ACMLRCFRQQ ENPPLPLGSK VVVLAGLFVM VLILFLGASM VYLIRVARRN 200
PCR clone   ACMLRCFRQQ ENPPLPLGSK VVVLAGLFVM VLILFLGASM VYLIRVARRN 200
λcDNA clone ACMLRCFRQQ ENPPLPLGSK VVVLAGLFVM VLILFLGASM VYLIRVARRN 200

EST consens QERALRTVWS SGDDKEQLVK NTYVL                          225
PCR clone   QERALRTVWS FGD                                      213
λcDNA clone QERALRTVWS SGDDKEQLVK NTYVL                          225
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Purification of Placental Bikunin using Superdex 75 Gel-Filtration

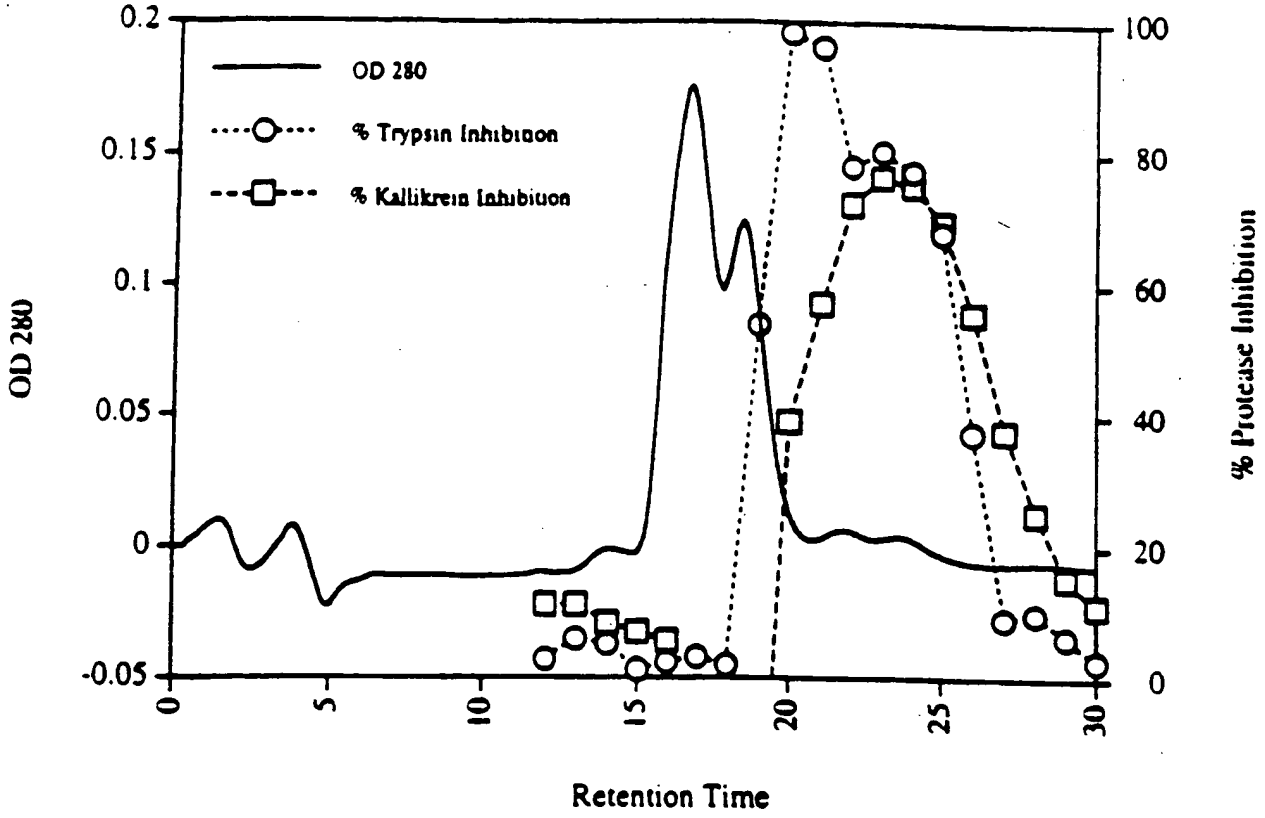
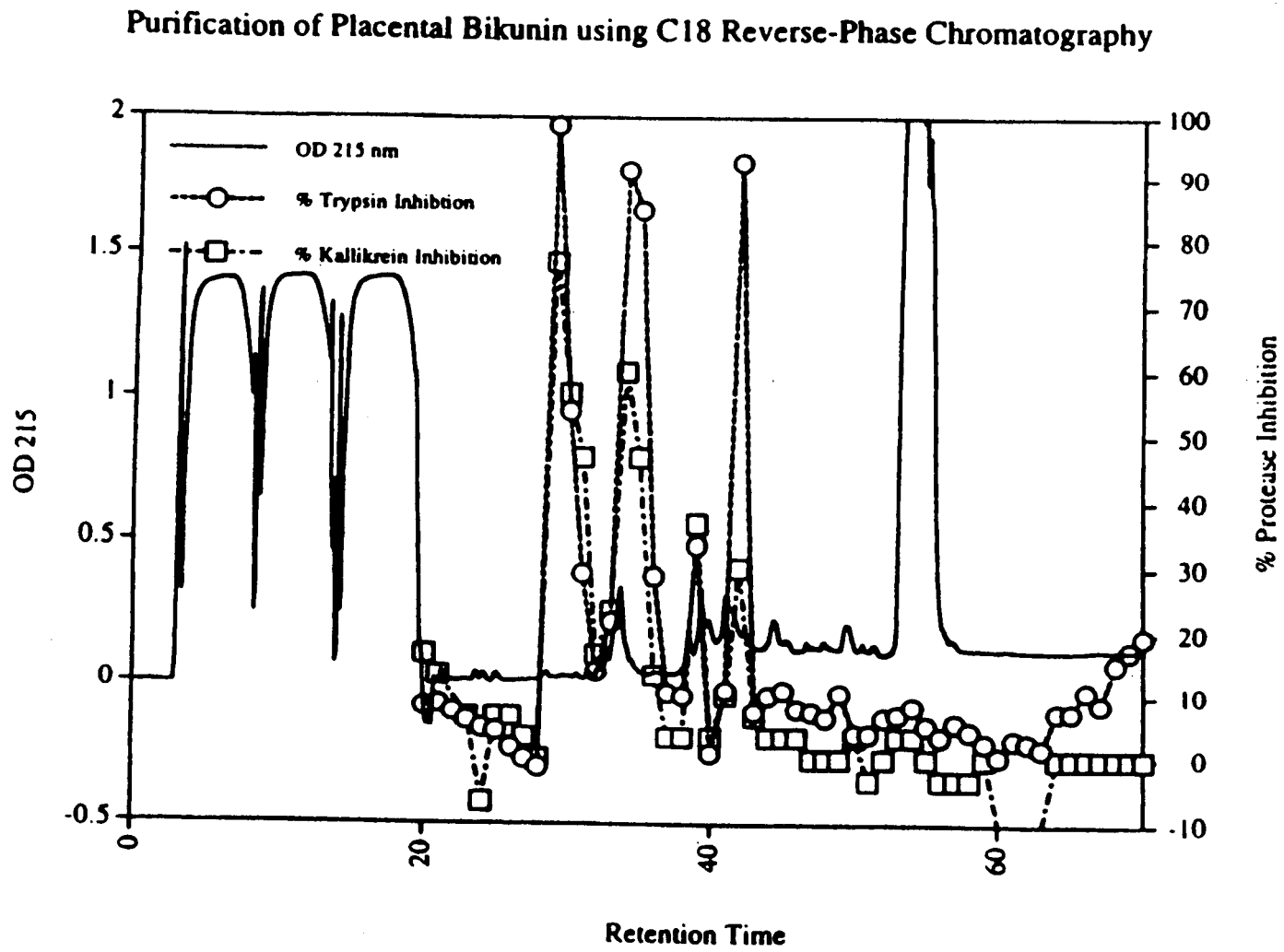


FIGURE 5

FIGURE 6



33/48

Figure 7

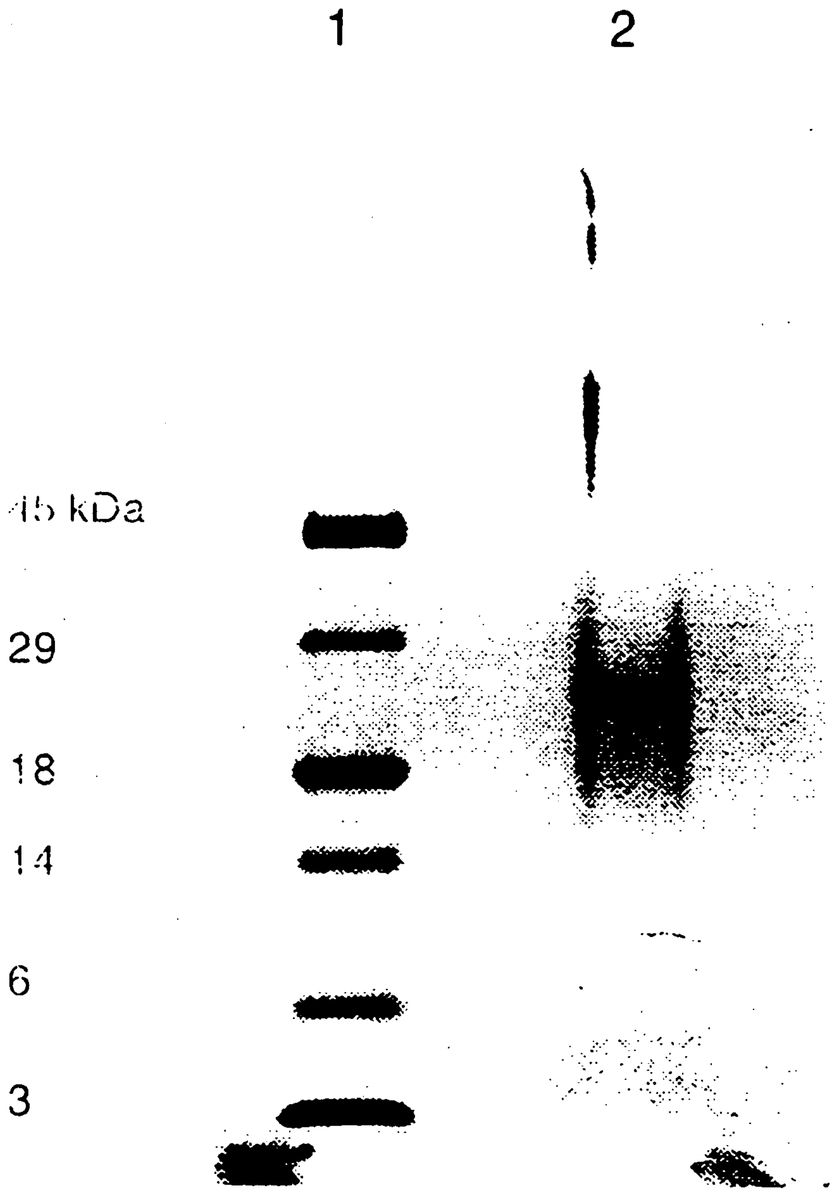


Figure 8A

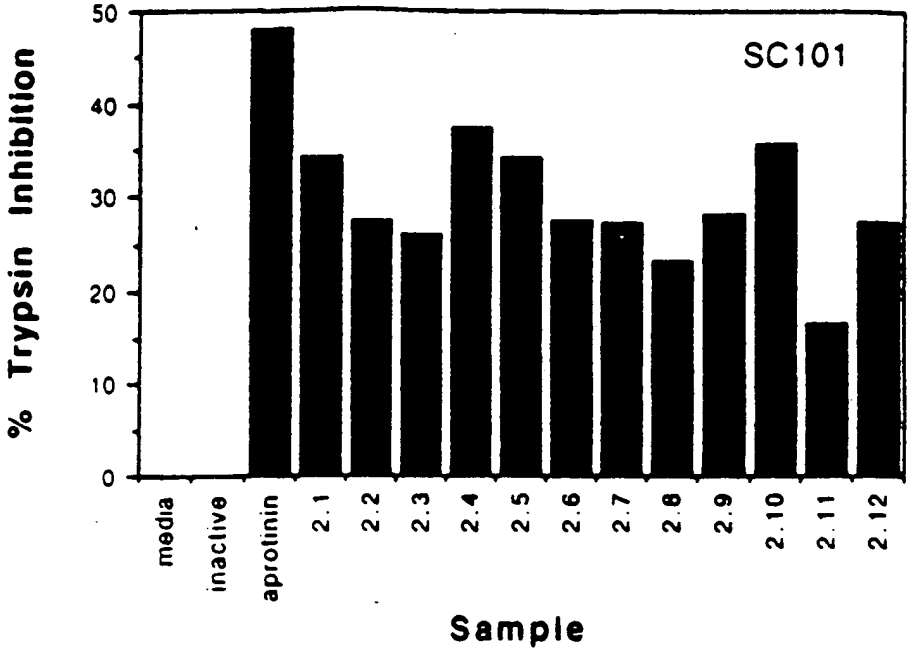


Figure 8B

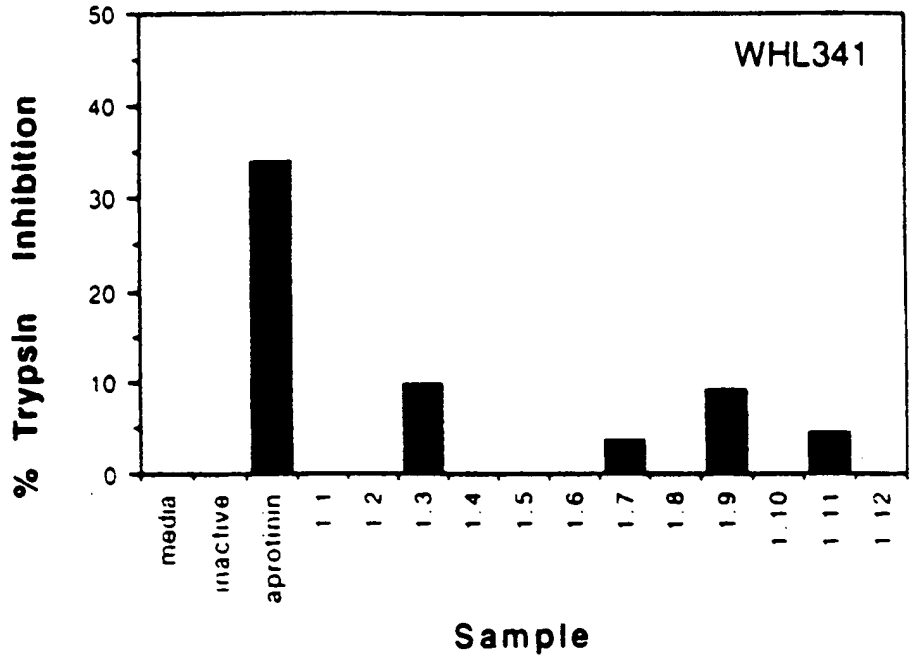


Figure 9A

SDS-PAGE

Figure 9B

Western

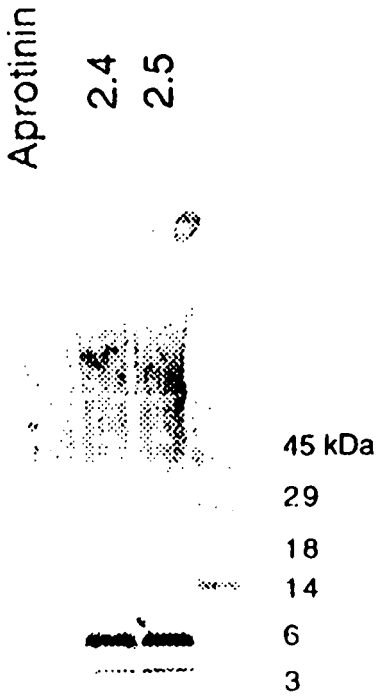


Figure 10

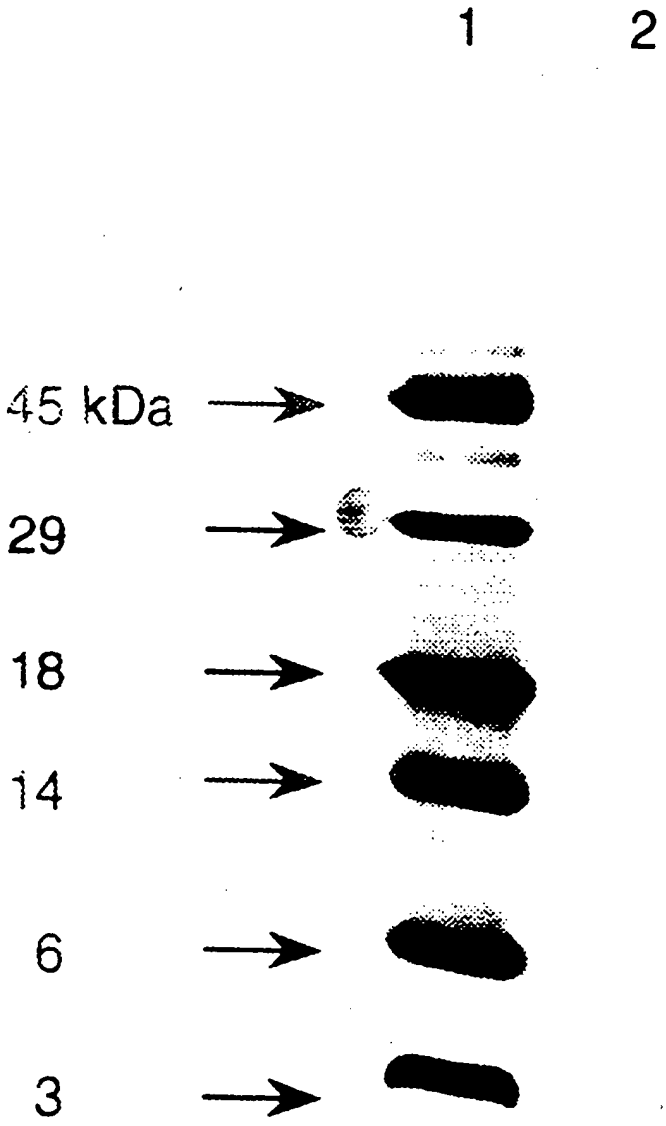


Figure 11A

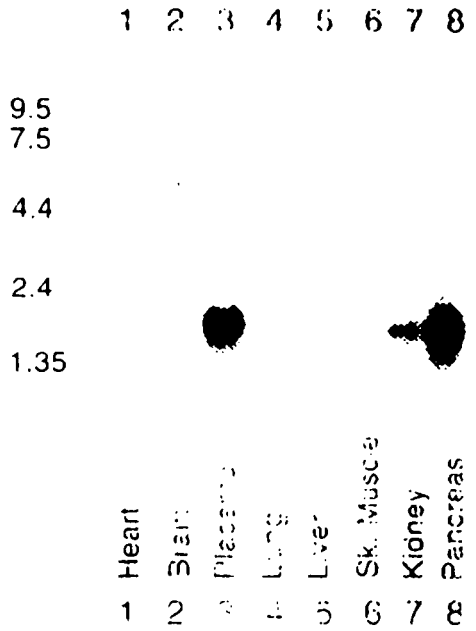


Figure 11B

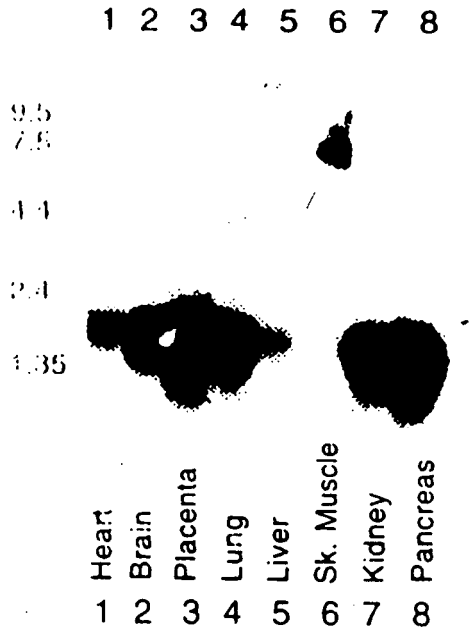


Figure 12A

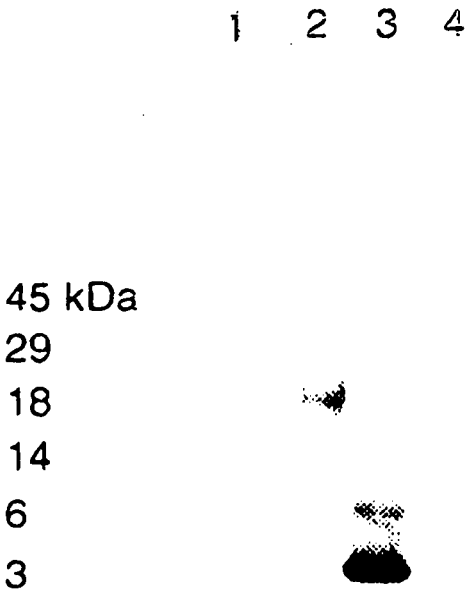


Figure 12B

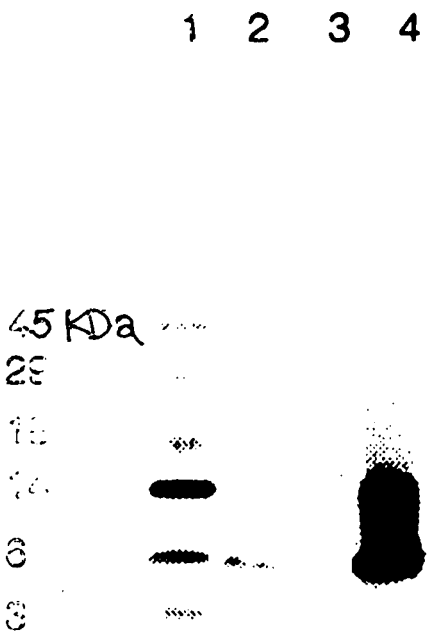


Figure 13

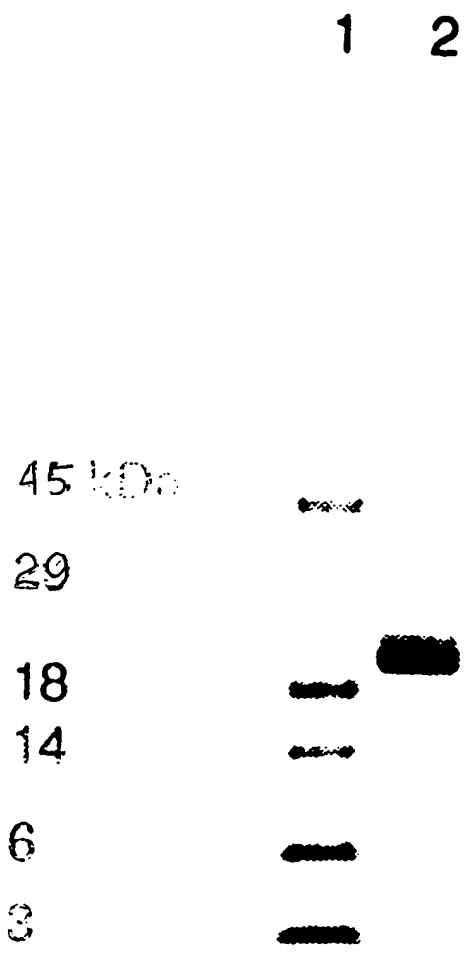


Figure 14

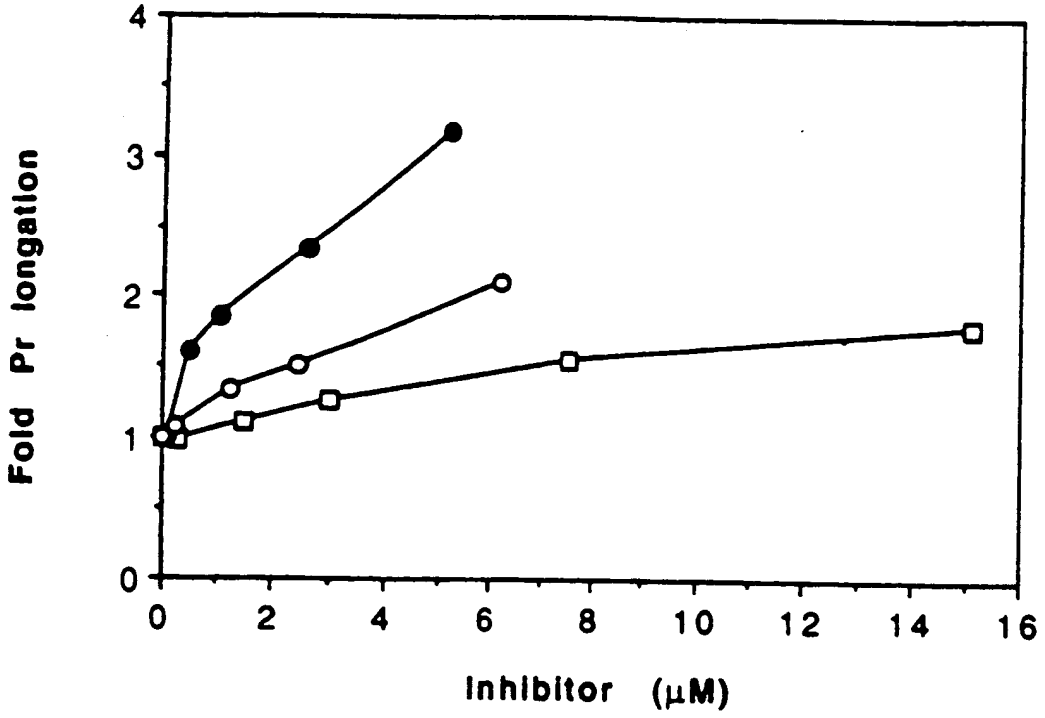


Figure 15 : The effect of BIKUNIN (0.2-2uM) and amiloride (100uM) on tracheal potential difference (TPD) 3 hours post treatment

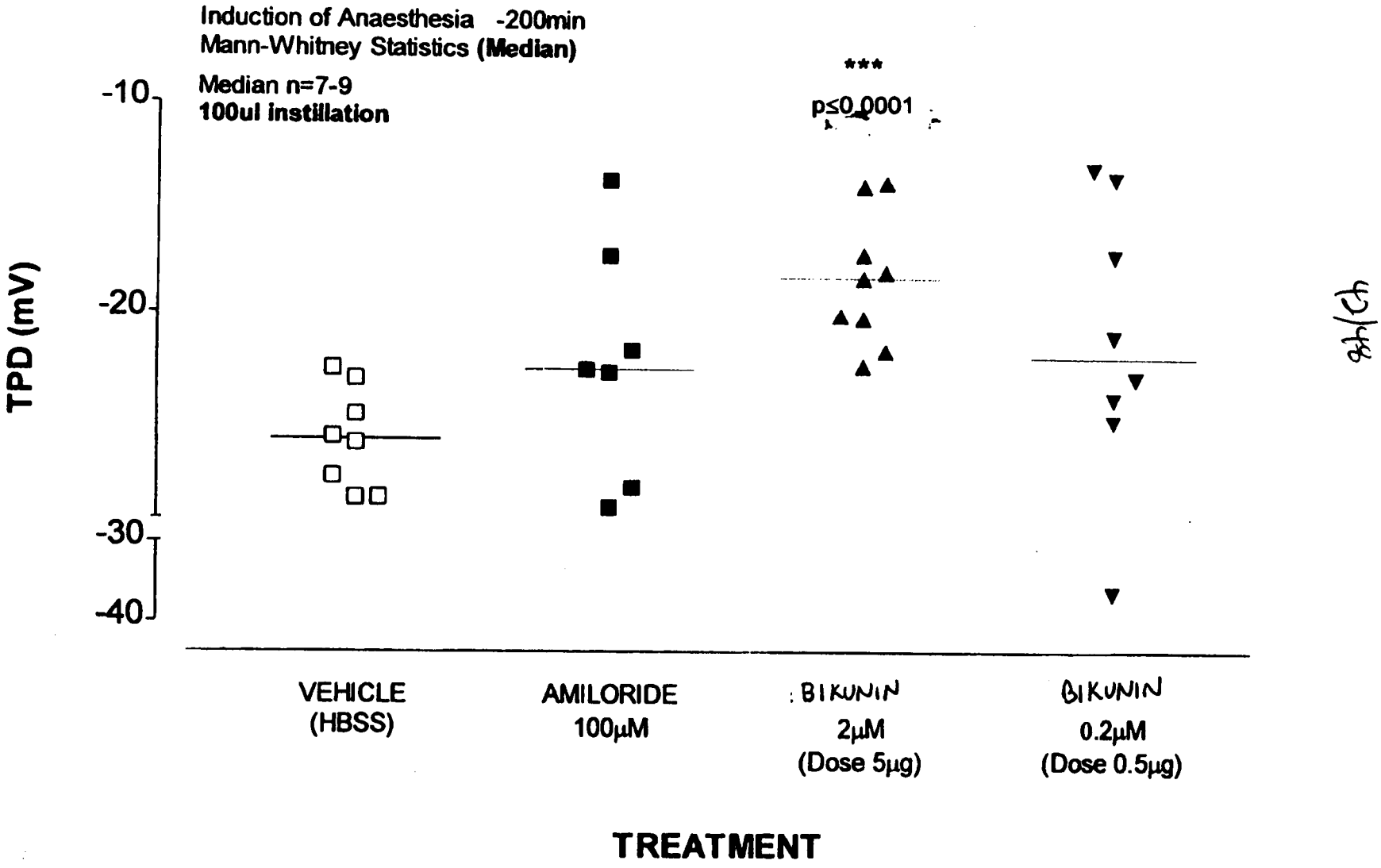
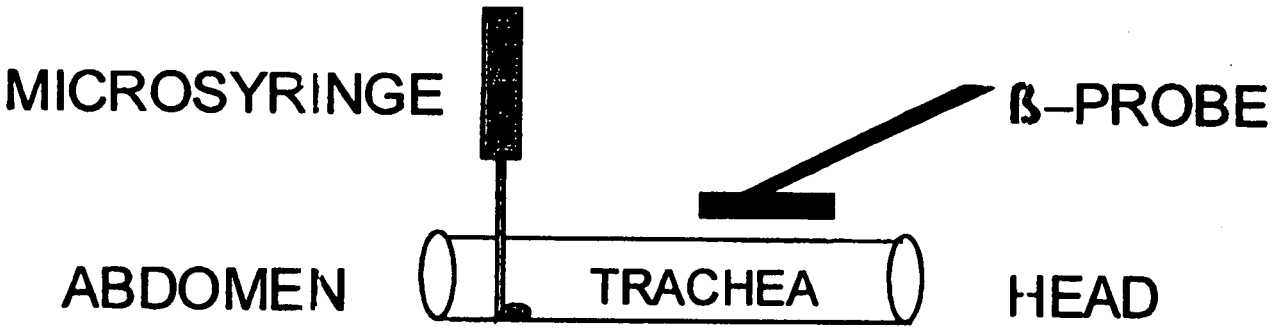
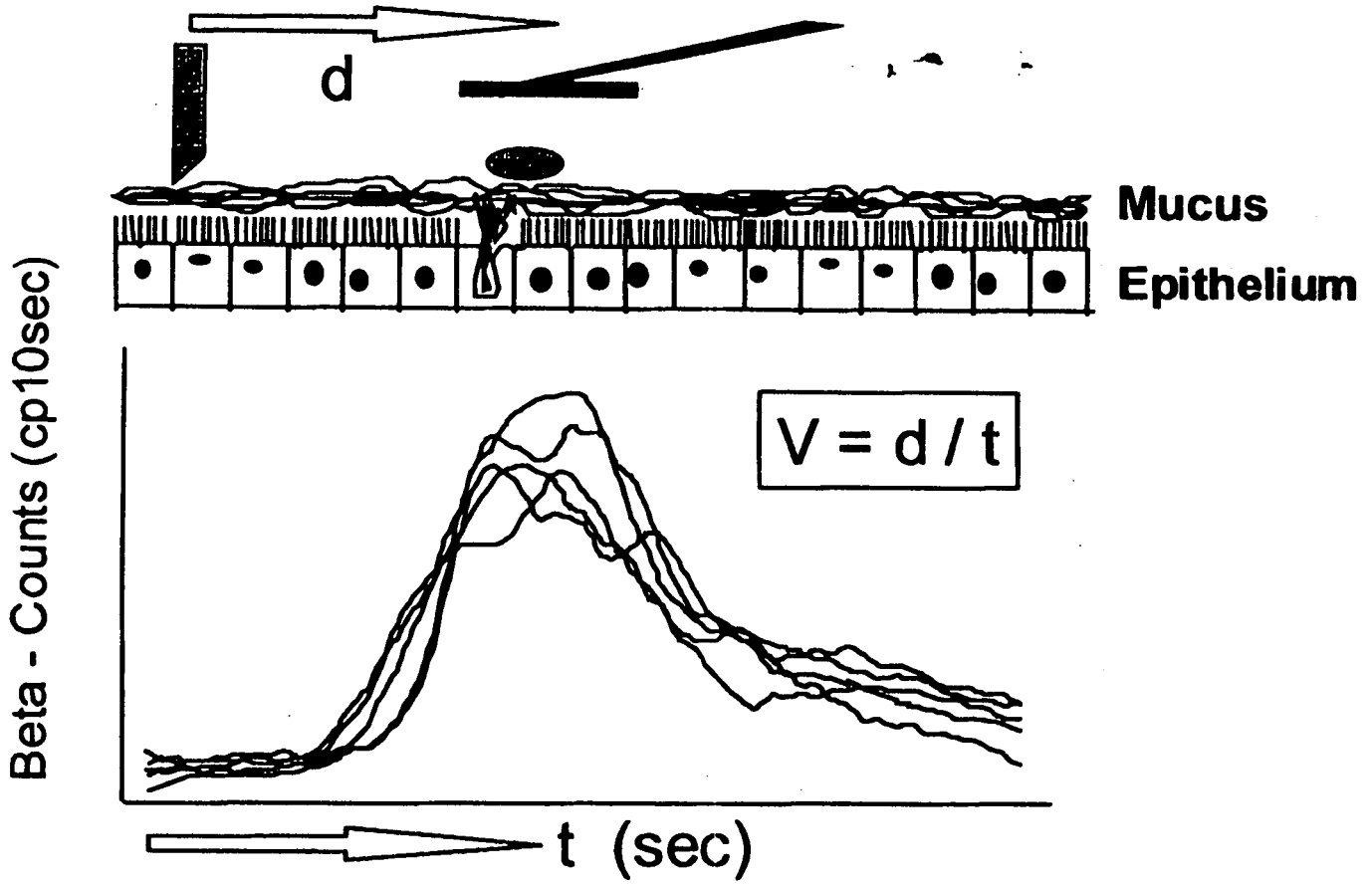


Figure 16 (a) : Diagram to show the arrangement of needle and Beta probe.



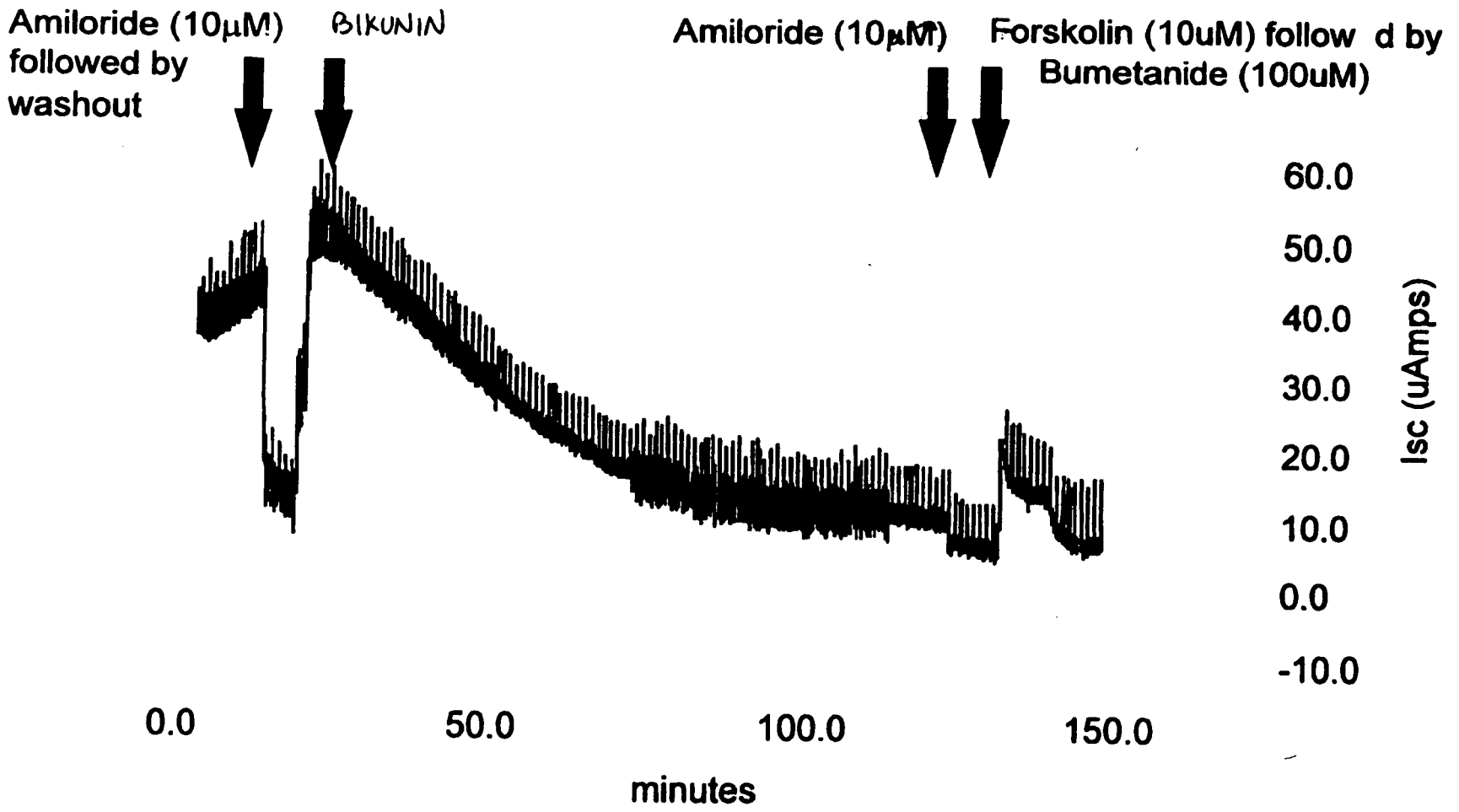
Longitudinal view

Figure 16 (b) : Counts detected by the probe as the ^{32}P-labeled Saccharomyces cerevisiae are transported along the tracheal mucociliary layer.



44/48

Figure 17 : Short circuit current (Isc) trace to show the action of BIKUNIN (70nM) on sodium dependent current in cultured normal human bronchial epithelial cells in vitro



45/48

Figure 18 : The effect of a 5 min aerosol of hypertonic saline (14.4%) on tracheal mucus velocity (TMV) in the anaesthetised spontaneously breathing guinea-pig

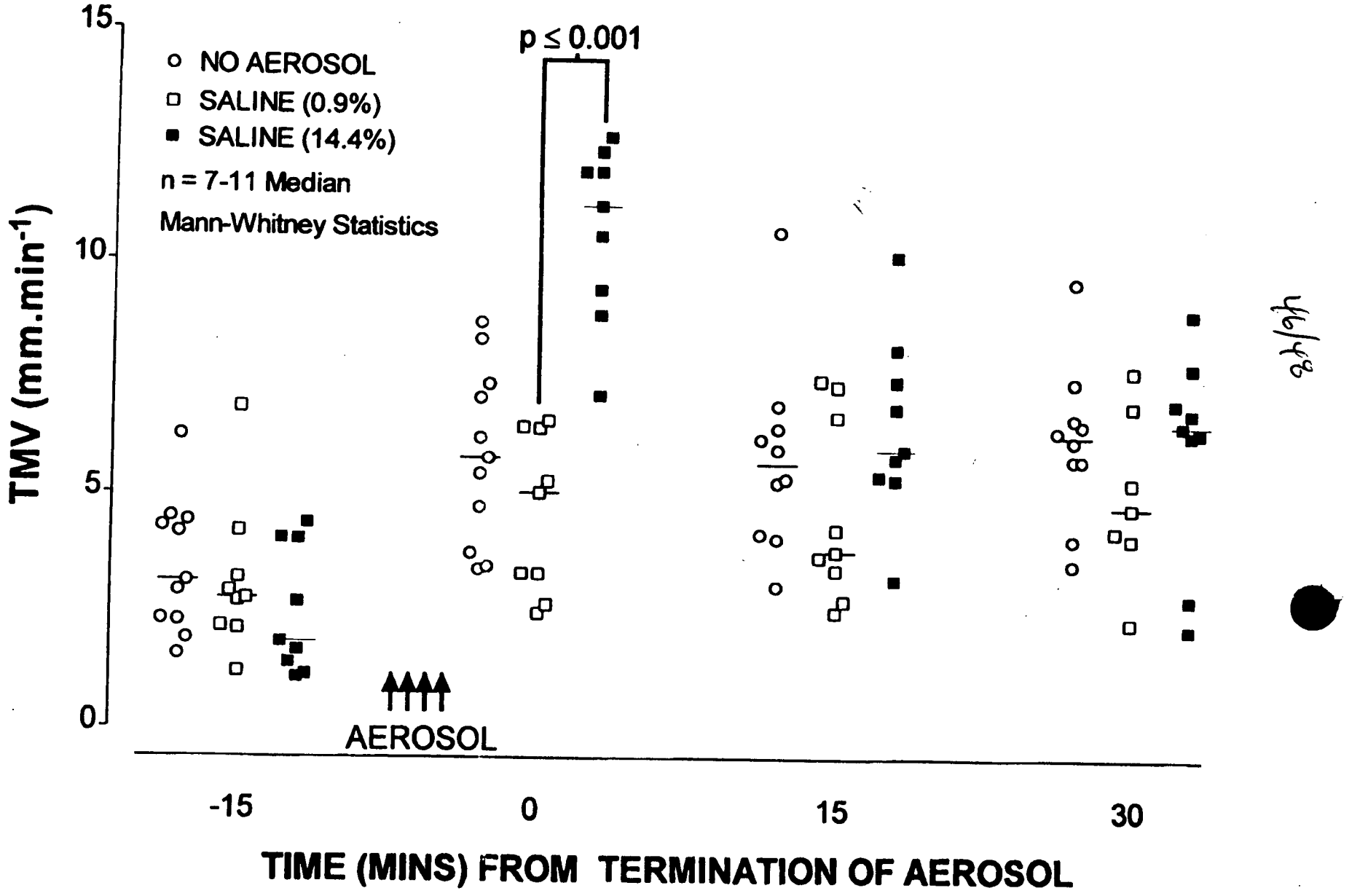


Figure 19 : The effect of a 20 min aerosol of amiloride (10mM) on tracheal mucus velocity (TMV) in the anaesthetised spontaneously breathing guinea-pig

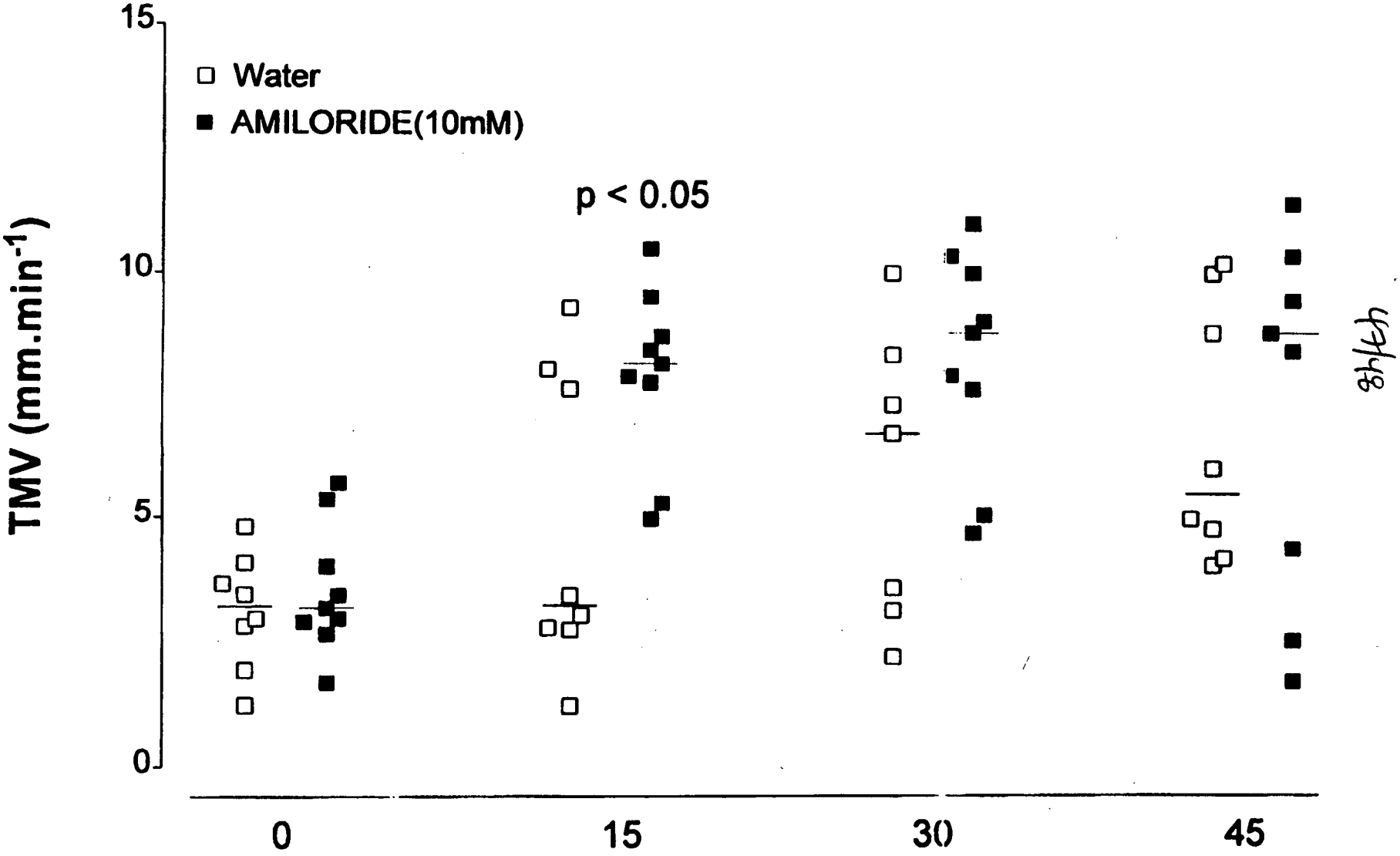


Figure 20 : Short circuit current (Isc) trace to show the action of ; Aprotinin Double Mutein (0.5-5ug.ml-1) on sodium dependent current in normal human bronchial epithelial cells in vitro